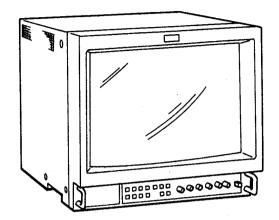
# PVM-1353MD/1453MD

# **SERVICE MANUAL**



# **US Model** Canadian Model

PVM-1353MD

Chassis No. SCC-H31B-A

AFP Model

Chassis No. SCC-H29C-A

#### SPECIFICATIONS (PVM-1353MD)

### Video signal

Color system

Resolution

Aperture correction Frequency response

600 TV lines 0 dB - +6.0 dBLINE 9.0 MHz (-3 dB)

NTSC, PAL

RGB 10.0 MHz (-3 dB)

Synchronization

AFC time constant 1.0 msec.

#### Picture performance

Overscan

20% overscan of CRT effective

Normal scan

7% overscan of CRT effective screen

area

Underscan

5% underscan of CRT effective

screen area

screen area

Linearity

Horizontal: Less than 4% (typical) Vertical: Less than 4% (typical)

Convergence

Central area 0.6 mm (typical) Peripheral area 0.8 mm (typical) Raster size stability H 1.0%, V 1.5%

High voltage regulation

CRT Color temperature SMPTE-C phosphor

6500K/5600K/USER (3200K -

10000K, factory setting is 6500K)

Inputs

Y/C IN

4-pin mini DIN connector

See the pin assignment on the

page 2.

VIDEO IN

BNC connector 1Vp-p ±6 dB, sync

negative

**AUDIO IN** 

phono jack, -5 dBu, more than 47k

ohms

R/R-Y IN, G/Y IN, B/B-Y IN

BNC connector

R, G, B channels

0.7 Vp-p ±6 dB

Sync on green

1.0 Vp-p Sync negative, 75 ohms

terminated

Continued on next page



TRINITRON® COLOR VIDEO MONITOR SONY

R-Y, B-Y channels

0.7 Vp-p ±6 dB

Y channel

1.0 Vp-p ±6 dB

(Standard color bar signal of 75%

chrominance)

**EXT SYNC IN** 

BNC connector composite sync

4 Vp-p ±6 dB, negative

**Outputs** 

Y/C OUT

4-pin mini DIN connector, 75 ohms

terminated

VIDEO OUT

BNC connector, 75 ohms terminated

AUDIO OUT

phono jack

R/R-Y OUT, G/Y OUT, B/B-Y OUT

EXT SYNC OUT

BNC connector, 75 ohms terminated BNC connector, 75 ohms terminated

DC OUT

5 V/1 A

Speaker output

Output level 0.8 W

Remote input

REMOTE 1

8-pin mini DIN

See the pin assignment on the

page 2.

RS-232C

9-pin D-sub

See the pin assignment on the

page 2.

General

Power requirements

120 V AC. 50/60 Hz

1.3 A

Capable of 100 to 240V operation

Operating temperature range

0 − 35°C

Storage temperature range

−10 − +40°C

Humidity

0 – 90%

Dimensions

Approx.  $346 \times 340 \times 411.5 \text{ mm}$ 

(w/h/d)

 $(13^5/8 \times 13^1/2 \times 16^1/4 \text{ inches})$ 

not incl. projecting parts and controls

Mass

Approx. 16.7 kg (36 lb 14 oz)

Accessory supplied

AC power cord (1) AC plug holder (1) Splash proof covers (2) Control panel cover (1)

Panel hinges (2)

Remote Control Connector 8-pin mini DIN (1) Operating Instructions (1)

Interface Manual for Programmers (1)

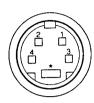
Quick Reference Card (1) Double-sided adhesive tapes (4)

0 dBu = 0.775 Vr.m.s.

Design and specifications are subject to change without notice.

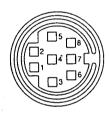
#### Pin assignment

# Y/C IN connector (4-pin mini DIN)



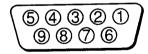
Pin No.	Signal	Description
1	Y-input	1 Vp-p, sync negative, 75 ohms
2	CHROMA sub- carrier-input	300 mVp-p, burst Delay time between Y and C: within 0±100 nsec., 75 ohms
3	GND for Y-input	GND
4	GND for CHROMA-input	GND

### REMOTE 1 connector (8-pin mini DIN)



Pin No.	Signal
1	REMOTE ON/OFF
2	LINE A
3	GND
4	LINE B
5	TALLY
6	OVER SCAN
7	RGB A
. 8	RGB B

### RS-232C connector (9-pin D-sub)



Pin No.	Signal	<u></u>	 	
1	_		 	
2	RX		 	
3	TX		 	
4	_			
5	GND		 	
6	_		 :	
7	RTS		 	
8	CTS		 	
9	_			`

# PVM-1353MD/1453MD

# SONY. SFRVICE MANUAL

**US Model** Canadian Model

PVM-1353MD Chassis No. SCC-H31B-A

AEP Model PVM-1453MD Chassis No. SCC-H29C-A

# **CORRECTION-1**

File this correction with the service manual.

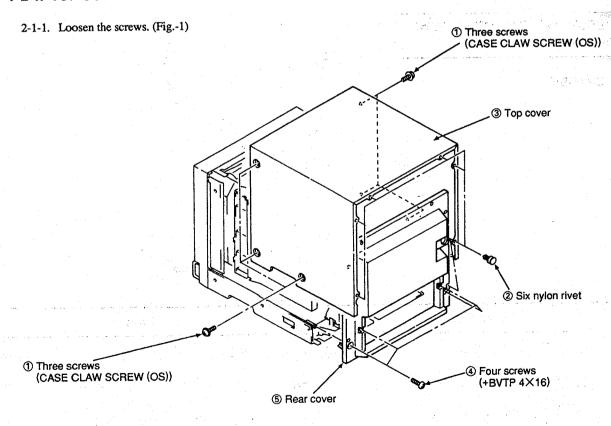
INTRODUCTION

DISASSEMBLY and EXPLODED VIEWS have some additions. (PVM-1353MD only)

: Indicates corrected portion

SECTION 2 DISASSEMBLY Page 27

: 2-1. TOP COVER AND REAR COVER REMOVAL

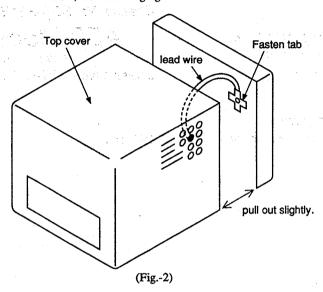


(Fig.-1)

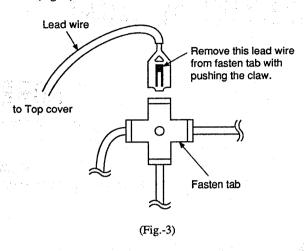


# 2-1-2. Pull out TOP COVER to backward slightly. (Fig.-2) Caution: At this time, must not pull out to backward so

considerably because the lead wire of TOP COVER breaks. Only the lead wire exchanging is not able when the lead wire has broken but COVER COMPLETE ASSY, TOP exchanging is able.



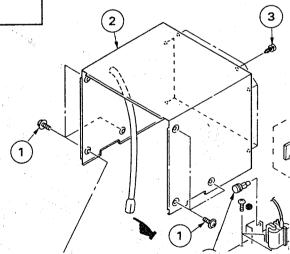
# 2-1-3. Four lead wires are connecting to the fasten tub and remove a lead wire which connected to the TOP COVER. (Fig.-3)



2-1-4. Remove the TOP COVER.

# 2. SECTION 7 EXPLODED VIEWS Page 95

7-1. CHASSIS



:	Incorrect				Correct	
Ref.No. PART No.	DESCRIPTION	REMARK	Ref.No.	PART No.	DESCRIPTION	REMARK
1 4-847-802-11 2 X-4032-539-2 3 4-391-825-01 4 *4-043-690-01 5 *A-1297-469-A	COVER ASSY, TOP RIVET, NYLON BRACKET, MAIN		1 2 3 4 5	4-847-802-11 A-1005-294-A 4-391-825-01 *4-043-690-01 *A-1297-469-A	COVER COMPLETE ASSY, TOP RIVET, NYLON BRACKET, MAIN	

#### **SPECIFICATIONS (PVM-1453MD)**

#### Video signal

Color system Resolution

PAL, NTSC

600 TV lines 0 dB - +6.0 dB

Aperture correction Frequency response

LINE 9.0 MHz (-3 dB) RGB 10.0 MHz (-3 dB)

Synchronization

AFC time constant 1.0 msec.

#### Picture performance

Overscan

20% overscan of CRT effective

screen area

Normal scan

7% overscan of CRT effective screen

area

Underscan

5% underscan of CRT effective

screen area

Linearity

Horizontal: Less than 4% (typical) Vertical: Less than 4% (typical)

Convergence

Central area 0.6 mm (typical) Peripheral area 0.8 mm (typical)

Raster size stability

H 1.0%, V 1.5%

High voltage regulation

3.5%

CRT

EBU phosphor

Color temperature

6500K/5600K/USER (3200K -10000K, factory setting is 6500K)

#### Inputs

Y/C IN

4-pin mini DIN connector See the pin assignment on the

page 3.

VIDEO IN

BNC connector 1 Vp-p ±6 dB, sync

negative

**AUDIO IN** 

phono jack, -5 dBu, more than 47k

ohms

R/R-Y IN, G/Y IN, B/B-Y IN

BNC connector

R, G, B channels

0.7 Vp-p ±6 dB

Sync on green

1.0 Vp-p Sync negative, 75 ohms

terminated

R-Y, B-Y channels

0.7 Vp-p ±6 dB

Y channel

1.0 Vp-p ±6 dB

(Standard color bar signal of 75%

chrominance)

**EXT SYNC IN** 

BNC connector composite sync

4 Vp-p ±6 dB, negative

#### **Outputs**

Y/C OUT

4-pin mini DIN connector, 75 ohms

terminated

VIDEO OUT

BNC connector, 75 ohms terminated

AUDIO OUT

phono jack

R/R-Y OUT, G/Y OUT, B/B-Y OUT

BNC connector, 75 ohms terminated BNC connector, 75 ohms terminated

EXT SYNC OUT DC OUT

5 V/I A

Speaker output

Output level 0.8 W

#### Remote input

REMOTE 1

8-pin mini DIN

See the pin assignment on the

page 4.

RS-232C

9-pin D-sub

See the pin assignment on the

page 4.

#### General

Power requirements

100 - 240 V AC, 50/60 Hz

0.9 - 0.4A

Operating temperature range

 $0 - 35^{\circ}C$ 

Storage temperature range

−10 − +40°C

Humidity

0 - 90%

Dimensions

Approx.  $346 \times 340 \times 411.5 \text{ mm}$ 

(w/h/d)

 $(13^{5}/8 \times 13^{1}/2 \times 16^{1}/4 \text{ inches})$ 

not incl. projecting parts and controls

Mass

Approx. 16.7 kg (36 lb 14 oz)

Accessory supplied

AC power cord (1) AC plug holder (1)

Splash proof covers (2) Control panel cover (1)

Panel hinges (2)

Remote Control Connector 8-pin mini DIN (1)

Instructions for use (1) Interface Manual for Programmers (1)

Quick Reference Card (1) Double-sided Adhesive Tapes (4)

Sales Companies Guide (1)

0 dBu = 0.775 Vr.m.s.

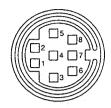
#### Pin assignment

Y/C IN connector (4-pin mini DIN)



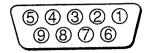
Pin No.	Signal	Description
1	Y-input	1 Vp-p, sync negative, 75 ohms
2	CHROMA sub- carrier-input	300 mVp-p, burst Delay time between Y and C: within 0±100 nsec., 75 ohms
3	GND for Y-input	GND
4	GND for CHROMA-input	GND

#### REMOTE 1 connector (8-pin mini DIN)



Pin No.	Signal
1	REMOTE ON/OFF
2	LINE A
3	GND
4	LINE B
5	TALLY
6	OVER SCAN
7	RGB A
8	RGB B

### RS-232C connector (9-pin D-sub)



Pin No.	Signal
1	
2	RX
3	TX
4	
5	GND
6	_
7	RTS
8	CTS
9	

Design and specifications are subject to change without notice.

#### (CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

#### WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!

COMPONENTS IDENTIFIED BY SHADING AND MARK & ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

#### ATTENTION!!

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BILNDAGE DU TUBE CATHODIQUE.

#### ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.

LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

# ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE À SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

# SAFETY CHECK-OUT (US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

- Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
- Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
- 3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
- Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
- Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
- Check the line cords for cracks and abrasion.
   Recommend the replacement of any such line cord to the customer.
- Check the B+ and HV to see if they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
- Check the metal trim, metallized knobs, screws, and all other exposed metal parts for AC leakage.
   Check leakage as described below.

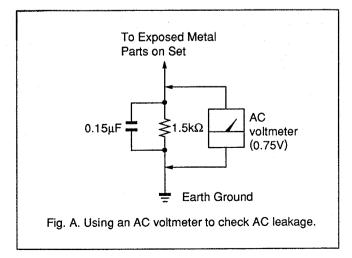
LEAKAGE TEST

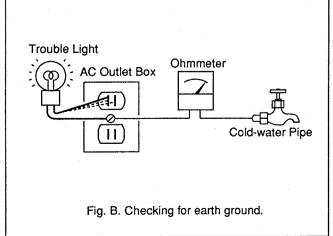
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

- A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufactures' instructions to use these instruments
- A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- 3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

#### HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)





# PVM-1353MD/1453MD

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# SECTION 1 GENERAL

#### 1-1. GENERAL OF PVM-1353MD

# **Features**

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

PVM-1353MD

#### **Picture**

# HR (High Resolution) Trinitron picture tube

HR Trinitron tube provides a high resolution picture. Horizontal resolution is more than 600 TV lines at the center of the picture.

#### Comb filter

When NTSC video signals are received, a comb filter activates to increase the resolution, resulting in fine picture detail without color spill or color noise.

#### Beam current feedback circuit

The built-in beam current feedback circuit assures stable white balance.

#### Inputs

#### Two color systems available

The monitor can display PAL, and NTSC signals. The appropriate color system is selected automatically.

### Analog RGB/component input connectors

Analog RGB or component (Y, R-Y and B-Y) signals from video equipment can be input through these connectors. Press the RGB/COMPONENT A/B select button on the front panel and select RGB or component signals from the on-screen menu.

#### Y/C input connector (S input connector)

The video signal, split into the chrominance signal (C) and the luminance signal (Y), can be input through this connector, eliminating the interference between the two signals, which tends to occur in a composite video signal, assuring video quality.

#### External sync input connectors

When the external RGB or component signal is input and sync signal is set to external in the on-screen menu, the monitor can be operated on the sync signal supplied from an external sync generator.

# Automatic termination (only terminals with the -\(\nabla\_\rightarrow\) mark)

The BNC input connectors on the rear panel are terminated at 75 ohms inside, when no cable is connected to the loop-through output connectors. When a cable is connected to an output connector, the 75-ohm termination is automatically released.

#### **Functions**

#### On-screen menus

You can set color temperature, CHROMA SET UP, and other settings by using the on-screen menus.

#### Overscan mode

The display size is enlarged by approximately 20% and the center part of the screen is easier to watch.

#### Underscan mode

The signal normally scanned outside of the screen can be monitored in the underscan mode.

#### Note

When the monitor is in the underscan mode, the dark RGB scanning lines may appear on the top edge of the screen. These are caused by an internal test signal, rather than the input signal.

#### Split function

The display splits into two parts (upper and lower). The upper part of the screen monitors the signal fed through the RGB/COMPONENT A input connectors and lower part of the screen monitors the signal fed through the RGB/COMPONENT B input connectors. You can compare the two screens.

#### Caption vision (Closed Caption) decoder

When a signal with Caption Vision is input, the caption is superimposed on the screen. You can select ON or OFF and set the caption type on the on-screen menu.

#### Auto/manual degaussing

Degaussing of the screen can be performed automatically when the power is turned on, or manually by pressing the DEGAUSS button.

#### Five menu languages

You can select the language used for on-screen menus from the five languages.

### Splash proof cover(s) and control panel cover

Splash proof covers that protect the ventilation holes from splashes (of medicines, etc.) and a control panel cover that protects the control buttons on the front panel from undesired touching are supplied.

#### **Quick Reference Card**

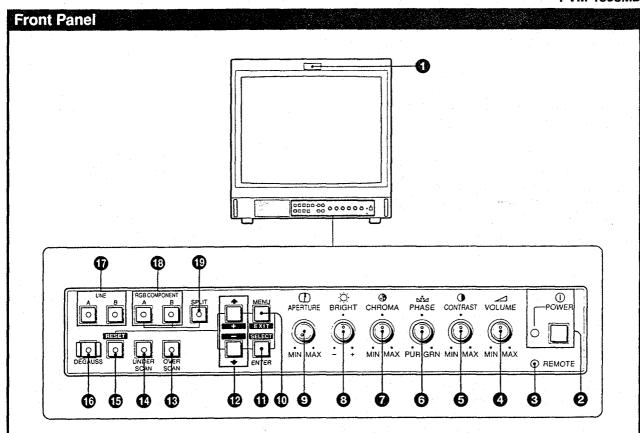
The Quick Reference Card is supplied to help you understand the menu configuration and operating method. You can attach the supplied double-sided adhesive tapes on the rear of the card.

#### EIA standard 19-inch rack mounting

By using an MB-502B (for PVM-1353MD) or SLR-103 (for PVM-1953MD) Mounting Bracket (not supplied), the monitor can be mounted in an EIA standard 19-inch rack. For details on mounting, see the instruction manual of the mounting bracket kit.

# **Location and Function of Parts and Controls**

PVM-1353MD



#### 1 Tally indicator

This indicator lights up when the video camera connected to this monitor is selected, indicating that the picture is being recorded. The tally control connection is needed.

For the pin assignment, see "Specifications" on page 14.

#### 2 ① POWER switch and indicator

Depress to turn the monitor on. The indicator will light up in green. To turn the power off, press this again.

#### **3** REMOTE indicator

This indicator lights up in the conditions below:

- When PRESET is set to ON in the menu.
- When REMOTE (RS-232C) is set to REMOTE ONLY or REMOTE & LOCAL in the menu, or
- When REMOTE ON is set via the REMOTE 1 terminal.

#### **4** ∠ VOLUME control

Turn this control clockwise or counterclockwise to obtain the desired volume.

#### **6** O CONTRAST control

Turn clockwise to make the contrast stronger and counterclockwise to make it weaker.

#### 6 № PHASE control

This control is effective only for the NTSC color system. Turn clockwise to make the skin tones greenish

4 and counterclockwise to make them purplish.

#### **7 O** CHROMA (chrominance) control

Turn clockwise to make the color intensity stronger and counterclockwise to make it weaker.

#### 8 O BRIGHT (brightness) control

Turn clockwise for more brightness and counterclockwise for less.

### APERTURE control

Turn clockwise for more sharpness and counterclockwise for less.

When the control is set to MIN, the picture becomes flat without need for corrections.

#### Note

The APERTURE, CHROMA, PHASE control settings have no effect on the pictures of RGB signals.

#### MENU (EXIT) button

Press to make the menu appear.
Press to return to the previous screen in the menu.

#### **©** ENTER (SELECT) button

Press to decide a selected item in the menu.

#### $\bullet$ (+)/ $\bullet$ (-) buttons

Press to move the cursor (>) or adjust selected value in the menus.

**®** OVERSCAN button

Press (light on) for overscanning. The display size is extended by approximately 20% so that the center of screen is easier to watch. By pressing the button again, the display returns to the normal size (light off).

#### UNDERSCAN button

Press (light on) for underscanning. The display size is reduced by approximately 5% so that four corners of the raster are visible. By pressing the button again, the display returns to the normal size (light off).

#### ® RESET button

During menu adjustments, press to reset the setting in the menu.

#### 16 DEGAUSS button

Press this button momentarily. The screen will be demagnetized. Wait for 10 minutes or more before activating this button again.

#### Note

The picture rolls vertically while the screen is being demagnetized.

#### **1** LINE A/B select buttons

Press to select a signal (light on).

- A: Press to monitor the signal fed through the LINE A input connectors.
- B: Press to monitor the signal fed through the LINE B input connectors.

#### ® RGB/COMPONENT A/B select buttons

Press to select a signal (light on).

- A: Press to monitor the signal fed through the RGB/COMPONENT A input connectors.
- B: Press to monitor the signal fed through the RGB/COMPONENT B input connectors.

#### SPLIT button

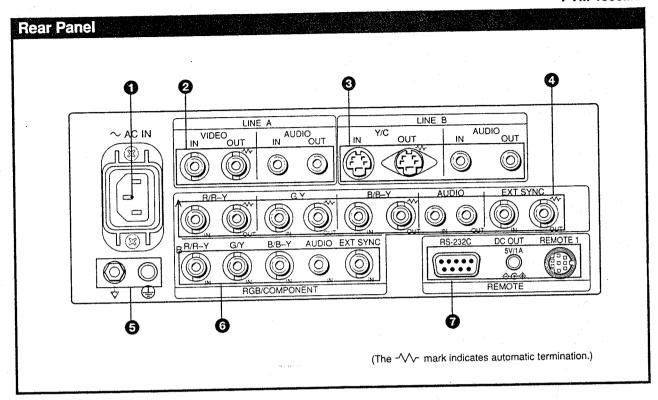
When you select RGB signals fed through the RGB/COMPONENT A and RGB/COMPONENT B input connectors, press this button (light on) to split the display into two parts (upper and lower), and monitor the both RGB signals simultaneously.

### Note

Make sure the signals fed through the RGB/COMPONENT A and RGB/COMPONENT B input connectors are synchronized.

# **Location and Function of Parts and Controls**

PVM-1353MD



To play the second of the seco

#### 1 AC IN socket

Connect the supplied AC power cord to this socket.

#### 2 LINE A connectors

Line input connectors for the composite video and audio signals and their loop-through output connectors. To monitor the input signal fed through these connectors, press LINE A select button (light on) on the front panel.

#### VIDEO IN (BNC)

Connect to the video output connector of a video equipment, such as a VTR or a color video camera. For a loop-through connection, connect to the video output connector of another monitor.

#### VIDEO OUT (BNC)

Loop-through output of the VIDEO IN connector. Connect to the video input connector for a VTR or another monitor.

When the cable is connected to this connector, the 75-ohms termination of the input is automatically released, and the signal input to the VIDEO IN connector is output from this connector.

#### AUDIO IN (phono jack)

Connect to the audio output connector of a VTR or to a microphone through a suitable microphone amplifier. For a loop-through connection, connect to the audio output connector of another monitor.

### AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN connector. Connect to the audio input connector of a VTR or another monitor.

#### **3** LINE B connectors

Separated Y/C input connectors, audio input connectors, and corresponding loop-through output connectors.

To monitor the input signal fed through these connectors, press LINE B select button (light on) on the front panel.

#### Y/C IN (4-pin mini DIN)

Connect to the Y/C separate output connector of a VTR, video camera or other video equipment.

#### Y/C OUT (4-pin mini DIN)

Loop-through output of the Y/C IN connector. Connect to the Y/C separate input connector of a VTR or another monitor.

When the cable is connected to this connector, the 75-ohms termination of the input is automatically released, and the signal input to the Y/C IN connector is output from this connector.

#### AUDIO IN (phono jack)

Connect to the audio output connector of a VTR or to a microphone through a suitable microphone amplifier. For a loop-through connection, connect to the audio output connector of another monitor.

#### AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN connector. Connect to the audio input connector of a VTR or another monitor.

#### PVM-1353MD

### 4 RGB/COMPONENT A connectors

RGB signal or component signal input connectors and their loop-through output connectors.

To monitor the input signal fed through these connectors, press the RGB/COMPONENT A select button (light on) on the front panel.

Then select one out of four items in the RGB A SYSTEM menu to set the RGB or COMP (component) signal and the INT SYNC (internal sync) or EXT SYNC (external sync) signal.

For the operation through the menus, see pages 8 to 10.

#### R/R-Y IN, G/Y IN, B/B-Y IN (BNC)

When "RGB-INT SYNC" or "COMP-INT SYNC" is selected in the RGB A SYSTEM menu, the monitor operates on the sync signal from the G/Y channel.

#### To monitor the RGB signal

Connect to the analog RGB signal output connectors of a video camera.

#### To monitor the component signal

Connect to the R-Y/Y/B-Y component signal output connectors of a Sony Betacam  $SP^{TM}$  camcorder.

#### R/R-Y OUT, G/Y OUT, B/B-Y OUT (BNC)

Loop-through outputs of the R/R-Y IN, G/Y IN, B/B-Y IN connectors.

When the cables are connected to these connectors, the 75-ohms termination of the inputs is automatically released, and the signal inputs to the R/R-Y IN, G/Y IN, B/B-Y IN connectors are output from these connectors.

#### To output the analog RGB signal

Connect to the analog RGB signal input connectors of a video printer or another monitor.

#### To output the component signal

Connect to the R-Y/Y/B-Y component signal input connectors of a Sony Betacam SP VTR.

#### AUDIO IN (phono jack)

Connect to the audio output connector of video equipment when the analog RGB or component signal is input.

#### AUDIO OUT (phono jack)

Loop-through outputs of the AUDIO IN connector.

#### EXT SYNC (external sync) IN (BNC)

When this monitor operates on an external sync signal, connect the signal from a sync generator to this connector.

To use the sync signal fed through this connector, select "RGB-EXT SYNC" or "COMP-EXT SYNC" in the RGB A SYSTEM menu.

#### EXT SYNC (external sync) OUT (BNC)

Loop-through output of the EXT SYNC IN connector. Connect to the external sync input connector of video equipment to be synchronized with this monitor. When the cable is connected to this connector, the 75-ohms termination of the input is released, and the signal input to the EXT SYNC IN connector is output from this connector.

# **⑤** Ground (♦/⊕) terminal Connect a GND cable.

#### **6** RGB/COMPONENT B connectors

RGB signal or component signal input connectors. To monitor the input signal fed through these connectors, press the RGB/COMPONENT B select button (light on) on the front panel.

Then select one out of four items in the RGB B SYSTEM menu to set the RGB or COMP (component) signal and the INT SYNC (internal sync) or EXT SYNC (external sync) signal.

For the operation through the menus, see pages 8 to 10.

### R/R-Y IN, G/Y IN, B/B-Y IN (BNC)

When "RGB-INT SYNC" or "COMP-INT SYNC" is selected in the RGB B SYSTEM menu, the monitor operates on the sync signal from the G/Y channel.

#### To monitor the RGB signal

Connect to the analog RGB signal output connectors of a video camera.

#### To monitor the component signal

Connect to the R-Y/Y/B-Y component signal output connectors of a Sony Betacam SP camcorder.

#### AUDIO IN (phono jack)

Connect to the audio output connector of video equipment when the analog RGB or component signal is input.

#### EXT SYNC (external sync) IN (BNC)

When this monitor operates on an external sync signal, connect the signal from a sync generator to this connector.

To use the sync signal fed through this connector, select "RGB -EXT SYNC" or "COMP-EXT SYNC" in the RGB B SYSTEM menu.

# **7** REMOTE connectors RS-232C (D-sub 9-pin)

Connect to the RS-232C control connector of other equipment. You can operate the monitor with the control command from the equipment. For the details, see the supplied Interface Manual for Programmers.

#### REMOTE 1 (8-pin mini DIN)

Connect to the tally output connector of a control console, effects, etc. The tally indicator on the front panel will be turned on and off by the connected equipment.

You can also connect a remote controller using this connector.

For the pin assignments of these connectors, see "Specifications" on page 2.

#### DC OUT 5V/1A connector

You can use this connector as a power source for the other equipment. DC 5V/1A is output.

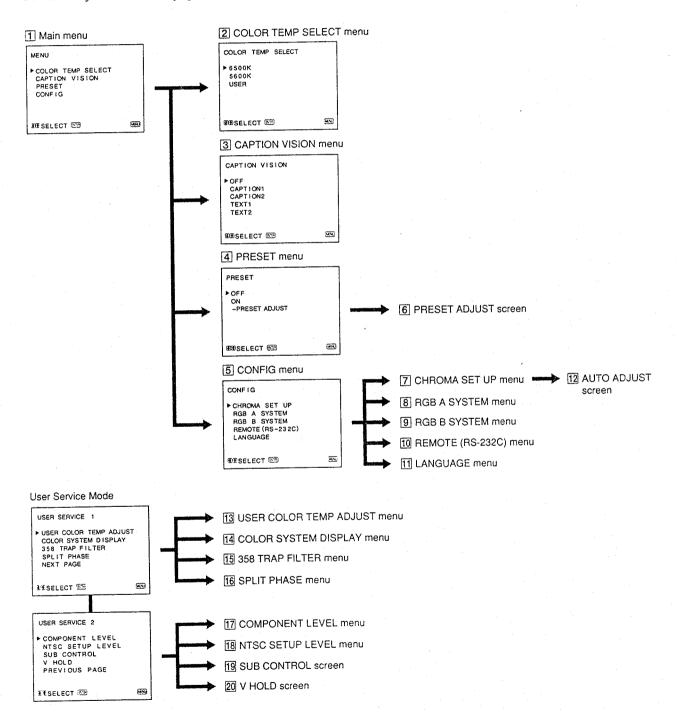
# **Using On-Screen Menus**

PVM-1353MD

### **Menu Configuration**

The flow chart shows the different levels of on-screen menus that you can use to make various adjustments and settings.

For details of each menu, see pages 9 and 10.

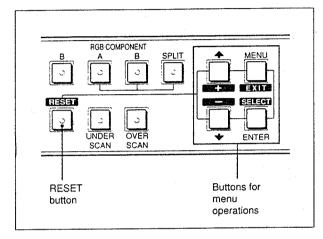




#### **Operating through Menus**

There are five buttons for menu operations on the front panel of the monitor. To display the main menu, first press MENU (EXIT). The buttons you can use appear at the bottom of the menu screen.

#### Functions of the buttons



Button	To select menu item	To adjust selected menu item
MENU return to the previous menu.		return to the previous menu.
ENTER SELECT	decide a selected item.	select an item.
t -	move the cursor (►) upwards.	increase selected value.
1	move the cursor (►) downwards.	decrease selected value.
RESET		reset current adjustment value to the factory setting.

(The above items in white type correspond to the marks in the menu.)

### The Contents of Menu Items

The following sentences show the details of each menu items.

[] indicates the factory setting position.

#### 1 Main menu

Select an item and press the ENTER (SELECT) button to go to the following menu.

#### 2 COLOR TEMP SELECT menu

Select the color temperature from among 6500K, 5600K and USER. USER is set to 6500K in the factory setting. You can adjust or change the color temperature in USER mode (a measuring instrument is needed).

16500K1

#### Note

The color temperature of the USER mode can be adjusted in the range from 3200K to 10000K. You can adjust the color temperature of the USER mode in the USER COLOR TEMP ADJUST menu (13) of the user service mode.

For the details, see "USER COLOR TEMP ADJUST menu (13)" on page 10.

#### 3 CAPTION VISION menu

To display closed captions, select ON and the type of caption you would like.

[OFF]

### 4 PRESET menu

You can preset each control to a desired level and set it. If you set PRESET to ON, the REMOTE indicator lights up and the controls on the front panel do not work. The monitor operates with the internal memory settings. For adjustment, select the PRESET ADJUST screen.

[OFF]

#### 5 CONFIG menu

Select an item for adjustment of the monitor.

#### 6 PRESET ADJUST screen

Adjust CONTRAST, BRIGHT, CHROMA, PHASE. VOLUME, APERTURE in the PRESET menu.

#### 7 CHROMA SET UP menu

Set to ON to adjust the internal decoder for CHROMA and PHASE (NTSC signal only) after AUTO ADJUST screen (12).

[OFF]

#### 8 RGB A SYSTEM menu

To monitor the signal fed through the RGB/ COMPONENT A connectors, set the RGB or COMP (component) signal and the INT SYNC (internal sync) or EXT SYNC (external sync) signal in this menu. [RGB-INT SYNC]

# **Using On-Screen Menus**

PVM-1353MD

9 RGB B SYSTEM menu

To monitor the signal fed through the RGB/ COMPONENT B connectors, set the RGB or COMP (component) signal and the INT SYNC (internal sync) or EXT SYNC (external sync) signal in this menu. [RGB-INT SYNC]

### 10 REMOTE (RS-232C) menu

Select one out of following three modes.

REMOTE OFF:

You can adjust settings and controls by the buttons and controls on the front panel.

RS-232C connector does not function.

REMOTE ONLY:

You can adjust settings and controls through the RS-232C connector.

Buttons and controls on the front panel, except the menu operation ones, do not function.

REMOTE & LOCAL:

You can adjust settings and controls both through the RS-232C connector and the front panel buttons. Controls on the front panel do not function.

[REMOTE OFF]

### 11 LANGUAGE menu

You can select the language used for on-screen menus from the following five languages (English, German, French, Italian, Spanish).

[ENGLISH]

12 AUTO ADJUST screen

Select the color bar signal (full, SMPTE, EIA) and press the ENTER (SELECT) button to start automatic adjustment for CHROMA and PHASE. For these adjustments to be valid, you must select ON in CHROMA SET UP menu (7).

### **User Service Mode**

The user service mode is useful when adjusting the settings and controls except for the above.

To enter the user service mode, press and hold the MENU (EXIT) button until the following USER SERVICE 1

To move to the second page of the mode, select "NEXT PAGE" and to return to the first page of the menu, select "PREVIOUS PAGE".

USER SERVICE 2

COMPONENT LEVEL
NTSC SETUP LEVEL
SUB CONTROL
V HOLD
PREVIOUS PAGE

3.4 SELECT 3.5

#### 13 USER COLOR TEMP ADJUST menu

The value of adjustment in this menu works only when "USER" is selected in the COLOR TEMP SELECT menu (2).

ADJUST GAIN:

Adjusts the color balance (gain) of the USER mode. ADJUST BIAS:

Adjusts the color balance (bias) of the USER mode. COLOR TEMP RANGE:

When you adjust the color temperature in the USER mode, select a color temperature range before adjusting ADJUST GAIN and ADJUST BIAS. If the adjusted color temperature is between 3200K and 5000K, select "3200K-5000K." If the adjusted color temperature is between 5000K and 10000K, select "5000K-10000K." [5000K-10000K]

### 14 COLOR SYSTEM DISPLAY menu

Select the color system display mode. In AUTO, the kind of color system being used appears on the screen each time you change the signal input. [AUTO]

#### 15 358 TRAP FILTER menu

Color spill or color noise may be eliminated if you select ON (NTSC signal only). Normally set it to OFF.

[OFF]

#### 16 SPLIT PHASE menu

When the SPLIT function is activated, if the lower side picture (the signal fed through the RGB/COMPONENT B input connectors) has some discrepancy of location with the upper side picture, adjust the SPLIT PHASE menu.

Each time you press the  $\uparrow$ (+) button, the lower side picture moves left.

#### Note

When the adjustment is made in the menu, the skew error will occur on the top of the lower side picture.

#### 17 COMPONENT LEVEL menu

Select the component level from among three modes. N10/SMPTE: for 100/0/100/0 signal

BETA 7.5: BETA 0:

for 100/7.5/75/7.5 signal for 100/0/75/0 signal

[BETA 7.5]

#### 18 NTSC SETUP LEVEL menu

Select the NTSC setup level from two modes. The 7.5 setup level is mainly used in north America. The 0 setup level is mainly used in Japan. [7.5]

### 19 SUB CONTROL screen

You can finely adjust the controls on the front panel. CONTRAST, PHASE, CHROMA and BRIGHT controls have clicks at the center of their adjustment range. You can adjust the setting of the click position with this feature.

#### 20 V HOLD screen

Adjust the vertical hold if the picture rolls vertically.

#### Note

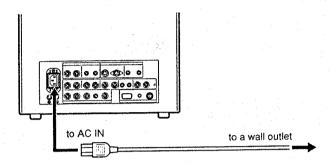
If the rolling of the picture prevents you from watching the screen, select an input that has nothing connected.

# **Power Sources**

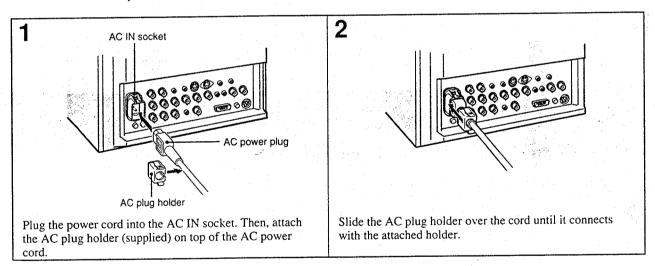
PVM-1353MD

### **House Current**

Connect the supplied AC power cord to the AC IN socket on the rear panel and to a wall outlet.



# To connect an AC power cord securely with the AC plug holder



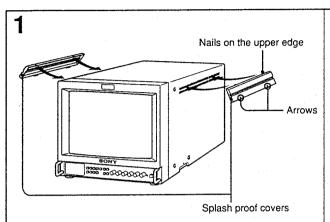
### To remove the AC power cord

Pull out AC plug holder by squeezing the up and down sides.

# **Attaching the Splash Proof Covers**

PVM-1353MD

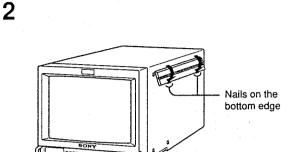
In order to protect the ventilation holes from splashes (of medicines, etc.), attach the splash proof covers (supplied) as shown below.



Making sure the arrows on the cover are facing down, hook the nails on the upper edge into the ventilation holes.

#### Note

Attach the splash proof covers to all them ventilation holes.

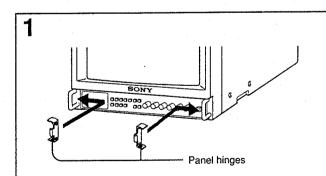


Push up the nails on the bottom edge and fit the cover into the lowest ventilation holes.

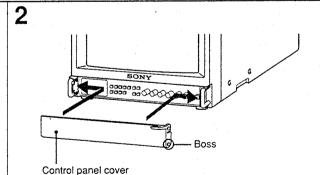
Attach the both covers to the left and right sides.

# **Attaching the Control Panel Cover**

In order to protect the control buttons on the front panel from undesired touching, attach the supplied control panel cover.



Attach the panel hinges to the left and right grips from the inner side.



Fit the bosses on the both sides of the control panel cover into the lower holes of the panel hinges with bending the control panel cover a little.

# **Features**

PVM-1453MD

#### **Picture**

# HR (High Resolution) Trinitron picture tube

HR Trinitron tube provides a high resolution picture. Horizontal resolution is more than 600 TV lines at the center of the picture.

#### Comb filter

When NTSC video signals are received, a comb filter activates to increase the resolution, resulting in fine picture detail without color spill or color noise.

#### Beam current feedback circuit

The built-in beam current feedback circuit assures stable white balance.

#### Inputs

#### Two color systems available

The monitor can display PAL, and NTSC signals. The appropriate color system is selected automatically.

# Analog RGB/component input connectors

Analog RGB or component (Y, R-Y and B-Y) signals from video equipment can be input through these connectors. Press the RGB/COMPONENT A/B select button on the front panel and select RGB or component signals from the on-screen menu.

# Y/C input connector (S input connector)

The video signal, split into the chrominance signal (C) and the luminance signal (Y), can be input through this connector, eliminating the interference between the two signals, which tends to occur in a composite video signal, assuring video quality.

### External sync input connectors

When the external RGB or component signal is input and sync signal is set to external in the on-screen menu, the monitor can be operated on the sync signal supplied from an external sync generator.

# Automatic termination (only terminals with the -//- mark)

The BNC input connectors on the rear panel are terminated at 75 ohms inside, when no cable is connected to the loop-through output connectors. When a cable is connected to an output connector, the 75-ohm termination is automatically released.

#### **Functions**

#### On-screen menus

You can set color temperature, CHROMA SET UP, and other settings by using the on-screen menus.

#### Overscan mode

The display size is enlarged by approximately 20% and the center part of the screen is easier to watch.

#### Underscan mode

The signal normally scanned outside of the screen can be monitored in the underscan mode.

#### Note

When the monitor is in the underscan mode, the dark RGB scanning lines may appear on the top edge of the screen. These are caused by an internal test signal, rather than the input signal.

#### **Split function**

The display splits into two parts (upper and lower). The upper part of the screen monitors the signal fed through the RGB/COMPONENT A input connectors and lower part of the screen monitors the signal fed through the RGB/COMPONENT B input connectors. You can compare the two screens.

#### Auto/manual degaussing

Degaussing of the screen can be performed automatically when the power is turned on, or manually by pressing the DEGAUSS button.

#### Five menu languages

You can select the language used for on-screen menus from the five languages.

### Splash proof cover(s) and control panel cover

Splash proof covers that protect the ventilation holes from splashes (of medicines, etc.) and a control panel cover that protects the control buttons on the front panel from undesired touching are supplied.

### **Quick Reference Card**

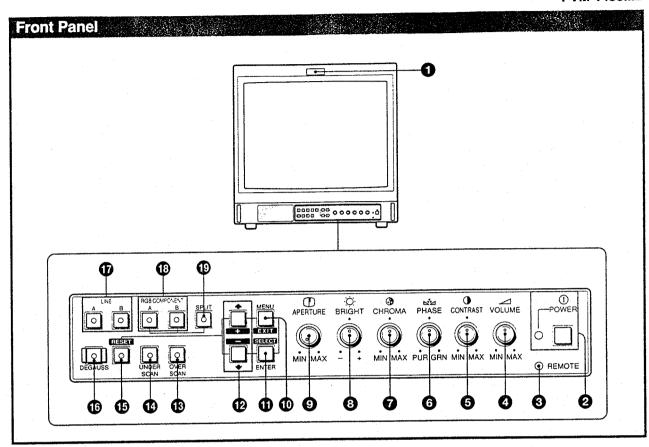
The Quick Reference Card is supplied to help you understand the menu configuration and operating method. You can attach the supplied double-sided adhesive tapes on the rear of the card.

# EIA standard 19-inch rack mounting

By using an MB-502B (for PVM-1453MD) or SLR-103 (for PVM-2053MD) Mounting Bracket (not supplied), the monitor can be mounted in an EIA standard 19-inch rack. For details on mounting, see the instruction manual of the mounting bracket kit.

# **Location and Function of Parts and Controls**

PVM-1453MD



1 Tally indicator

This indicator lights up when the video camera connected to this monitor is selected, indicating that the picture is being recorded. The tally control connection is needed. For the pin assignment, see "Specifications" on page 16.

#### 2 ① POWER switch and indicator

Depress to turn the monitor on. The indicator will light up in green. To turn the power off, press this again.

#### **3** REMOTE indicator

This indicator lights up in the conditions below:

- When PRESET is set to ON in the menu.
- When REMOTE (RS-232C) is set to REMOTE ONLY or REMOTE & LOCAL in the menu, or
- When REMOTE ON is set via the REMOTE 1 terminal.

#### 

Turn this control clockwise or counterclockwise to obtain the desired volume.

#### 6 O CONTRAST control

Turn clockwise to make the contrast stronger and counterclockwise to make it weaker.

#### 6 № PHASE control

This control is effective only for the NTSC color system. Turn clockwise to make the skin tones greenish and counterclockwise to make them purplish.

#### 

Turn clockwise to make the color intensity stronger and counterclockwise to make it weaker.

#### 3 O BRIGHT (brightness) control

Turn clockwise for more brightness and counterclockwise for less.

#### APERTURE control

Turn clockwise for more sharpness and counterclockwise for less.

When the control is set to MIN, the picture becomes flat without need for corrections.

#### Note

The APERTURE, CHROMA, PHASE control settings have no effect on the pictures of RGB signals.

#### 10 MENU (EXIT) button

Press to make the menu appear.

Press to return to the previous screen in the menu.

#### **1** ENTER (SELECT) button

Press to decide a selected item in the menu.

#### **1 (+)/ ↓** (**-**) buttons

Press to move the cursor (>) or adjust selected value in the menus.



Press (light on) for overscanning. The display size is extended by approximately 20% so that the center of screen is easier to watch. By pressing the button again, the display returns to the normal size (light off).

# **10** UNDERSCAN button

Press (light on) for underscanning. The display size is reduced by approximately 5% so that four corners of the raster are visible. By pressing the button again, the display returns to the normal size (light off).

#### ® RESET button

During menu adjustments, press to reset the setting in the menu.

# 1 DEGAUSS button

Press this button momentarily. The screen will be demagnetized. Wait for 10 minutes or more before activating this

#### Note

button again.

The picture rolls vertically while the screen is being demagnetized.

# The LINE A/B select buttons

Press to select a signal (light on).

- A: Press to monitor the signal fed through the LINE A input connectors.
- B: Press to monitor the signal fed through the LINE B input connectors.

# ® RGB/COMPONENT A/B select buttons

Press to select a signal (light on).

- A: Press to monitor the signal fed through the RGB/ COMPONENT A input connectors.
- B: Press to monitor the signal fed through the RGB/ COMPONENT B input connectors.

#### (B) SPLIT button

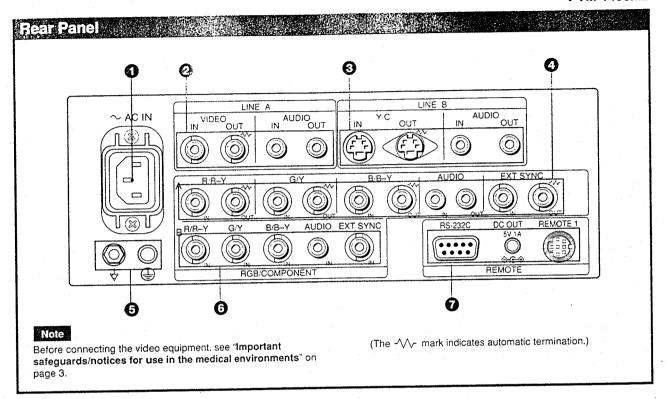
When you select RGB signals fed through the RGB/ COMPONENT A and RGB/COMPONENT B input connectors, press this button (light on) to split the display into two parts (upper and lower), and monitor the both RGB signals simultaneously.

#### Note

Make sure the signals fed through the RGB/ COMPONENT A and RGB/COMPONENT B input connectors are synchronized.

# Location and Function of Parts and Controls

PVM-1453MD



#### AC IN socket

Connect the supplied AC power cord to this socket.

#### 2 LINE A connectors

Line input connectors for the composite video and audio signals and their loop-through output connectors. To monitor the input signal fed through these connectors, press LINE A select button (light on) on the front panel.

#### VIDEO IN (BNC)

Connect to the video output connector of a video equipment, such as a VTR or a color video camera. For a loop-through connection, connect to the video output connector of another monitor.

#### VIDEO OUT (BNC)

Loop-through output of the VIDEO IN connector. Connect to the video input connector for a VTR or another monitor.

When the cable is connected to this connector, the 75-ohms termination of the input is automatically released, and the signal input to the VIDEO IN connector is output from this connector.

#### AUDIO IN (phono jack)

Connect to the audio output connector of a VTR or to a microphone through a suitable microphone amplifier. For a loop-through connection, connect to the audio output connector of another monitor.

### AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN connector. Connect to the audio input connector of a VTR or another monitor.

#### **1** LINE B connectors

Separated Y/C input connectors, audio input connectors, and corresponding loop-through output connectors.

To monitor the input signal fed through these connectors, press LINE B select button (light on) on the front panel.

#### Y/C IN (4-pin mini DIN)

Connect to the Y/C separate output connector of a VTR, video camera or other video equipment.

#### Y/C OUT (4-pin mini DIN)

Loop-through output of the Y/C IN connector. Connect to the Y/C separate input connector of a VTR or another monitor.

When the cable is connected to this connector, the 75-ohms termination of the input is automatically released, and the signal input to the Y/C IN connector is output from this connector.

#### AUDIO IN (phono jack)

Connect to the audio output connector of a VTR or to a microphone through a suitable microphone amplifier. For a loop-through connection, connect to the audio output connector of another monitor.

### AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN connector. Connect to the audio input connector of a VTR or another monitor.

#### **4** RGB/COMPONENT A connectors

RGB signal or component signal input connectors and their loop-through output connectors.

To monitor the input signal fed through these connectors, press the RGB/COMPONENT A select button (light on) on the front panel.

Then select one out of four items in the RGB A SYSTEM menu to set the RGB or COMP (component) signal and the INT SYNC (internal sync) or EXT SYNC (external sync) signal.

For the operation through the menus, see pages 10 to 12.

#### R/R-Y IN, G/Y IN, B/B-Y IN (BNC)

When "RGB-INT SYNC" or "COMP-INT SYNC" is selected in the RGB A SYSTEM menu, the monitor operates on the sync signal from the G/Y channel.

#### To monitor the RGB signal

Connect to the analog RGB signal output connectors of a video camera.

#### To monitor the component signal

Connect to the R-Y/Y/B-Y component signal output connectors of a Sony Betacam SP<sup>TM</sup> camcorder.

#### R/R-Y OUT, G/Y OUT, B/B-Y OUT (BNC)

Loop-through outputs of the R/R-Y IN, G/Y IN, B/B-Y IN connectors.

When the cables are connected to these connectors, the 75-ohms termination of the inputs is automatically released, and the signal inputs to the R/R-Y IN, G/Y IN, B/B-Y IN connectors are output from these connectors.

#### To output the analog RGB signal

Connect to the analog RGB signal input connectors of a video printer or another monitor.

#### To output the component signal

Connect to the R-Y/Y/B-Y component signal input connectors of a Sony Betacam SP VTR.

#### AUDIO IN (phono jack)

Connect to the audio output connector of video equipment when the analog RGB or component signal is input.

### AUDIO OUT (phono jack)

Loop-through outputs of the AUDIO IN connector.

#### EXT SYNC (external sync) IN (BNC)

When this monitor operates on an external sync signal, connect the signal from a sync generator to this connector.

To use the sync signal fed through this connector, select "RGB-EXT SYNC" or "COMP-EXT SYNC" in the RGB A SYSTEM menu.

### EXT SYNC (external sync) OUT (BNC)

Loop-through output of the EXT SYNC IN connector. Connect to the external sync input connector of video equipment to be synchronized with this monitor. When the cable is connected to this connector, the 75-ohms termination of the input is released, and the signal input to the EXT SYNC IN connector is output from this connector.

# **5** Ground (♦/⊕) terminal Connect a GND cable.

#### **6** RGB/COMPONENT B connectors

RGB signal or component signal input connectors. To monitor the input signal fed through these connectors, press the RGB/COMPONENT B select button (light on) on the front panel.

Then select one out of four items in the RGB B SYSTEM menu to set the RGB or COMP (component) signal and the INT SYNC (internal sync) or EXT SYNC (external sync) signal.

For the operation through the menus, see pages 10 to 12

#### R/R-Y IN, G/Y IN, B/B-Y IN (BNC)

When "RGB-INT SYNC" or "COMP-INT SYNC" is selected in the RGB B SYSTEM menu, the monitor operates on the sync signal from the G/Y channel.

### To monitor the RGB signal

Connect to the analog RGB signal output connectors of a video camera.

#### To monitor the component signal

Connect to the R-Y/Y/B-Y component signal output connectors of a Sony Betacam SP camcorder.

#### AUDIO IN (phono jack)

Connect to the audio output connector of video equipment when the analog RGB or component signal is input.

#### EXT SYNC (external sync) IN (BNC)

When this monitor operates on an external sync signal, connect the signal from a sync generator to this connector.

To use the sync signal fed through this connector, select "RGB -EXT SYNC" or "COMP-EXT SYNC" in the RGB B SYSTEM menu.

# **7** REMOTE connectors

#### RS-232C (D-sub 9-pin)

Connect to the RS-232C control connector of other equipment. You can operate the monitor with the control command from the equipment. For the details, see the supplied Interface Manual for Programmers.

#### REMOTE 1 (8-pin mini DIN)

Connect to the tally output connector of a control console, effects, etc. The tally indicator on the front panel will be turned on and off by the connected equipment.

You can also connect a remote controller using this connector.

For the pin assignments of these connectors, see "Specifications" on page 4.

#### DC OUT 5V/1A connector

You can use this connector as a power source for the other equipment. DC 5V/1A is output.

# **Using On-Screen Menus**

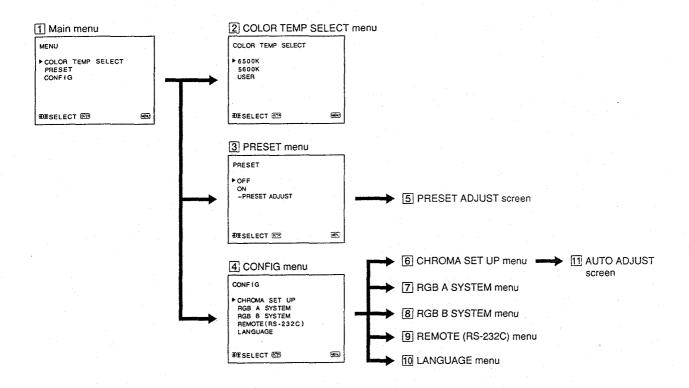
karigal (s. 1884) Albahahamadi kerinca sara nathadahilikation menderang mendebahahatah sarahkan didikan didikan didikan mendebahai sarah s

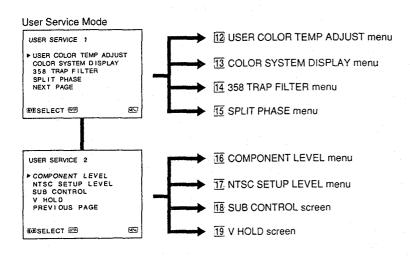
PVM-1453MD

### **Menu Configuration**

The flow chart shows the different levels of on-screen menus that you can use to make various adjustments and settings.

For details of each menu, see pages 11 and 12.



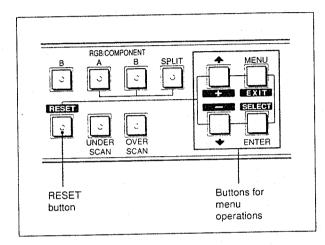




# **Operating through Menus**

There are five buttons for menu operations on the front panel of the monitor. To display the main menu, first press MENU (EXIT). The buttons you can use appear at the bottom of the menu screen.

#### Functions of the buttons



Button	To select menu item	To adjust selected menu item
MENU <b>EXIT</b>	return to the previous menu.	return to the previous menu.
ENTER SELECT	decide a selected item.	select an item.
1	move the cursor (►) upwards.	increase selected value.
	move the cursor (►) downwards.	decrease selected value.
RESET		reset current adjustment value to the factory setting.

(The above items in white type correspond to the marks in the menu.)

### The Contents of Menu Items

The following sentences show the details of each menu

[] indicates the factory setting position.

#### 1 Main menu

Select an item and press the ENTER (SELECT) button to go to the following menu.

#### 2 COLOR TEMP SELECT menu

Select the color temperature from among 6500K, 5600K and USER. USER is set to 6500K in the factory setting. You can adjust or change the color temperature in USER mode (a measuring instrument is needed).

[6500K]

#### Note

The color temperature of the USER mode can be adjusted in the range from 3200K to 10000K. You can adjust the color temperature of the USER mode in the USER COLOR TEMP ADJUST menu (12) of the user service mode. For the details, see USER COLOR TEMP ADJUST menu (12) on page 12.

3 PRESET menu

You can preset each control to a desired level and set it. If you set PRESET to ON, the REMOTE indicator lights up and the controls on the front panel do not work. The monitor operates with the internal memory settings. For adjustment, select the PRESET ADJUST screen.

[OFF]

#### 4 CONFIG menu

Select an item for adjustment of the monitor.

#### 5 PRESET ADJUST screen

Adjust CONTRAST, BRIGHT, CHROMA, PHASE, VOLUME, APERTURE in the PRESET menu.

6 CHROMA SET UP menu

Set to ON to adjust the internal decoder for CHROMA and PHASE (NTSC signal only) after AUTO ADJUST screen (11).

[OFF]

#### 7 RGB A SYSTEM menu

To monitor the signal fed through the RGB/
COMPONENT A connectors, set the RGB or COMP
(component) signal and the INT SYNC (internal sync)
or EXT SYNC (external sync) signal in this menu.
[RGB-INT SYNC]

8 RGB B SYSTEM menu

To monitor the signal fed through the RGB/COMPONENT B connectors, set the RGB or COMP (component) signal and the INT SYNC (internal sync) or EXT SYNC (external sync) signal in this menu.

[RGB-INT SYNC]

# **Using On-Screen Menus**

PVM-1453MD

#### 9 REMOTE (RS-232C) menu

Select one out of following three modes.

REMOTE OFF:

You can adjust settings and controls by the buttons and controls on the front panel.

The RS-232C connector does not function.

#### REMOTE ONLY:

You can adjust settings and controls through the RS-232C connector.

Buttons and controls on the front panel, except the menu operation ones, do not functin.

#### REMOTE & LOCAL:

You can adjust settings and controls both through the RS-232C connector and the front panel buttons. Controls on the front panel do not function.

[REMOTE OFF]

#### 10 LANGUAGE menu

You can select the language used for on-screen menus from the following five languages (English, German. French, Italian, Spanish).

#### 11 AUTO ADJUST screen

Select the color bar signal (full, SMPTE, EIA) and press the ENTER (SELECT) button to start automatic adjustment for CHROMA and PHASE. For these adjustments to be valid, you must select ON in CHROMA SET UP menu (6).

### **User Service Mode**

The user service mode is useful when adjusting the settings and controls except for the above.

To enter the user service mode, press and hold the MENU (EXIT) button until the following USER SERVICE 1

To move to the second page of the mode, select "NEXT PAGE" and to return to the first page, select "PREVIOUS PAGE".

5...

USER SERVICE 1

► USER COLOR TEMP ADJUST COLOR SYSTEM DISPLAY 358 TRAP FILTER SPLIT PHASE

DESELECT 5

USER SERVICE 2 COMPONENT LEVEL NTSC SETUP LEVEL SUB CONTROL V HOLD PREVIOUS PAGE MESELECT 🖾

Œ.

#### 12 USER COLOR TEMP ADJUST menu

The value of adjustment in this menu works only when "USER" is selected in the COLOR TEMP SELECT menu (2).

#### ADJUST GAIN:

Adjusts the color balance (gain) of the USER mode. ADJUST BIAS:

Adjusts the color balance (bias) of the USER mode. COLOR TEMP RANGE:

When you adjust the color temperature in the USER mode, select a color temperature range before adjusting ADJUST GAIN and ADJUST BIAS. If the adjusted color temperature is between 3200K and 5000K, select "3200K-5000K." If the adjusted color temperature is between 5000K and 10000K, select "5000K-10000K." [5000K-10000K]

#### 13 COLOR SYSTEM DISPLAY menu

Select the color system display mode. In AUTO, the kind of color system being used appears on the screen each time you change the signal input.

#### 14 358 TRAP FILTER menu

Color spill or color noise may be eliminated if you select ON (NTSC signal only). Normally set it to OFF.

#### 15 SPLIT PHASE menu

When the SPLIT function is activated, if the lower side picture (the signal fed through the RGB/COMPONENT B input connectors) has some discrepancy of location with the upper side picture, adjust the SPLIT PHASE

Each time you press the  $\uparrow$ (+) button, the lower side picture moves left.

#### Note

When the adjustment is made in the menu, the skew error will occur on the top of the lower side picture.

#### 16 COMPONENT LEVEL menu

Select the component level from among three modes.

N10/SMPTE: for 100/0/100/0 signal BETA 7.5: for 100/7.5/75/7.5 signal

BETA 0: for 100/0/75/0 signal

[N10/SMPTE]

#### 17 NTSC SETUP LEVEL menu

Select the NTSC setup level from two modes. The 7.5 setup level is mainly used in north America. The 0 setup level is mainly used in Japan.

#### 18 SUB CONTROL screen

You can finely adjust the controls on the front panel. CONTRAST, PHASE, CHROMA and BRIGHT controls have clicks at the center of their adjustment range. You can adjust the setting of the click position with this feature.

#### 19 V HOLD screen

Adjust the vertical hold if the picture rolls vertically.

#### Note

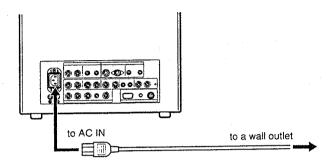
If the rolling of the picture prevents you from watching the screen, select an input that has nothing connected.

# Power Sources

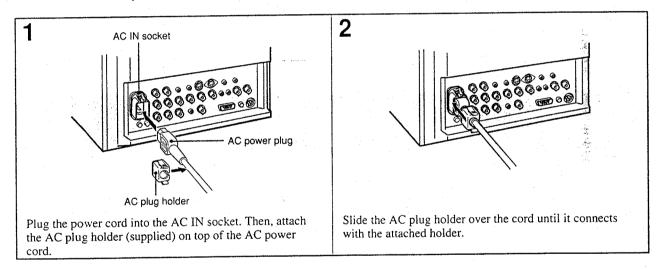
PVM-1453MD

#### **House Current**

Connect the supplied AC power cord to the AC IN socket on the rear panel and to a wall outlet.



# To connect an AC power cord securely with the AC plug holder



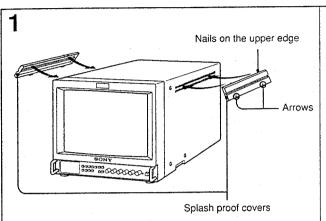
### To remove the AC power cord

Pull out AC plug holder by squeezing the up and down sides.

# Attaching the Splash Proof Covers

PVM-1453MD

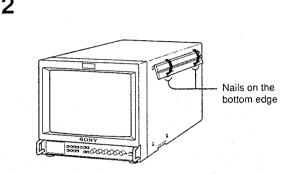
In order to protect the ventilation holes from splashes (of medicines, etc.), attach the splash proof covers (supplied) as shown below.



Making sure the arrows on the cover are facing down, hook the nails on the upper edge into the ventilation holes.

#### Note

Attach the splash proof covers to all them ventilation holes.

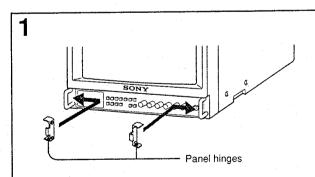


Push up the nails on the bottom edge and fit the cover into the lowest ventilation holes.

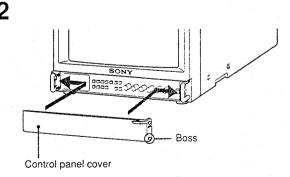
Attach the both covers to the left and right sides.

# **Attaching the Control Panel Cover**

In order to protect the control buttons on the front panel from undesired touching, attach the supplied control panel cover.



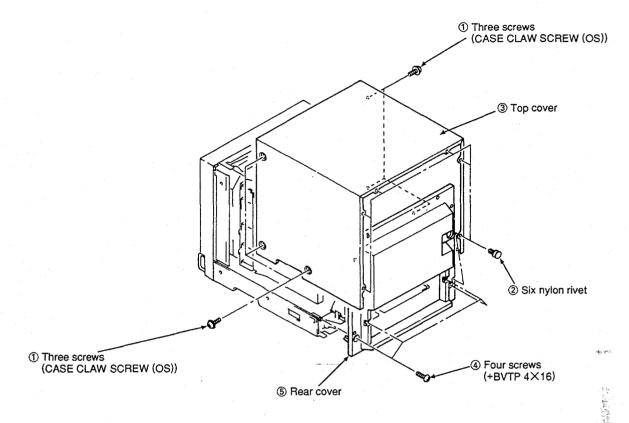
Attach the panel hinges to the left and right grips from the inner side.



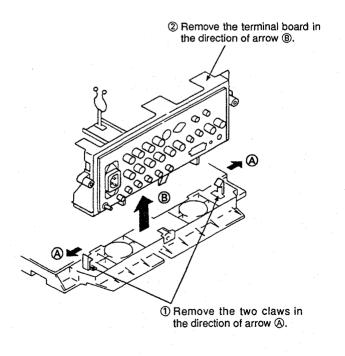
Fit the bosses on the both sides of the control panel cover into the lower holes of the panel hinges with bending the control panel cover a little.

# SECTION 2 DISASSEMBLY

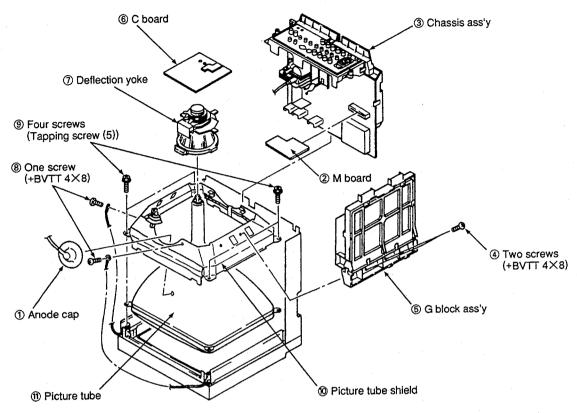
#### 2-1. TOP COVER AND REAR COVER REMOVAL



#### 2-2. TERMINAL BOARD REMOVAL



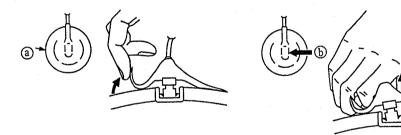
# 2-3. PICTURE TUBE REMOVAL



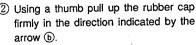
#### · REMOVAL OF ANODE:CAP

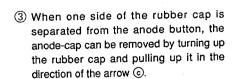
NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

### • REMOVING PROCEDURES



- direction indicated by arrow (a).
- ① Turn up one side of the rubber cap in the ② Using a thumb pull up the rubber cap

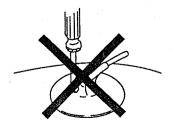


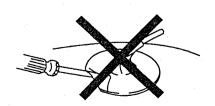


Anode button

#### . HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- Don't press the rubber hardly not to hurt inside of anode-caps! .
  - A material fitting called as shatter-hook terminal is built in the rubber.
- 3 Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or hurt the rubber.





# SECTION 3 SET-UP ADJUSTMENTS

#### 3-1. PREPARATIONS (1)

#### Service Mode

This set is provided with a switch for service on the front panel that can be used to make various adjustments. The operation method of this switch is explained in detail below.

#### 1. ENTERING THE SERVICE MODE

Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.

#### 2. SERVICE MODE DISPLAY

(1)	(5)	(4)	(3)	(6)
(2)				

Range of Sevice Mode Display

- (1) The service items are largely classified into 16 types displayed by titles.
- (2) The names of the service items or READ / WRITE guidance, etc., are displayed. The names are displayed to the left and the guidance to the right.
- (3) This is the serial number for each of the service items. 1-120.
- (4) This is the adjustment data for the servise items that are now stored in the RAM. Adjustments can be made by changing these values, but as long as nothing is written to the ROM the adjustment values will be erased by turning off the power or by reading, so please be careful.
- (5) When the adjustment data than is now displayed is identical with the data in the ROM, the cursor (▷) is displayed.
- (6) The present status is displayed.
  - [\*]: Writing to the ROM. Make sure not to turn off the power while this display is on.
  - [?]: ROM reading error. In this case, an image is output with the standard adjustment data that the microcomputer itself possesses.
  - [¿]: Problem in the I2C bus.

#### 3. FINISHING THE SERVICE MODE

Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.

#### 4. EASY ON / OFF OF THE SERVICE MODE

If once entering the service mode after having turned on the power, easy ON / OFF is possible by once more pressing the A, B or C switch on the front panel (the LED lights) as long as the power is not turned off or as long as the service mode is not finished.

# 5. CHANGE OF POSITION OF THE SERVICE MODE DISPLAY

If the switch is continuously pressed when turning on in the above easy mode, the display position moves in the V direction. This method is used when the display is outside of the effective screen area.

#### 6. CHANGE OF SERVICE ITEMS

The items are returned with the [MENU] key and forwarded with the [ENTER] key. When a key is continuously pressed, the operation will be repeated.

#### 7. CHANGE OF SERVICE DATA

The service data is made larger with the  $[\uparrow]$  key and smaller with the  $[\downarrow]$  key. When continuously pressing the keys, the operation will be repeated.

#### 8. READING OF SERVICE DATA

When reading data from the ROM to the RAM, press the RESET key once and check than the READ display is shown in the guidance, and then press the RESET key once again. The adjustment data that is written will return to its previous state, so please be careful.

#### 9. WRITING OF SERVICE DATA

When writing data from the RAM to the ROM, press the [DEGAUSS] key once and check that the WRITE display is shown in the guidance, and then press the [DEGAUSS] key once again. Not only the displayed data will be written, but all data, so please be careful.

#### 10. CARRYING OUT FACTORY RESETTING

In case the adjustment data has been destroyed for some reason, and you keep pressing the RESET key at the beginning of the above reading, the READ guidance will change to FACTORY RESET guidance in approximately 3 seconds so that the factory resetting can be carried out. By once again pressing the RESET key after this, resetting will be carried out ([\*] will be displayed as status) and factory resetting will be executed. However, in case the data available at the time of shipment from the factory has been destroyed, or if the ROM has been replaced, etc., or if factory setting mentioned later on has been carried out, factory resetting is executed.

#### 11. CARRYING OUT FACTORY SETTING

Make sure to make possible the above factory resetting by making a copy of the adjustment data when replacing the ROM. If you keep pressing the [DEGAUSS] key at the beginning of the above writing, the WRITE guidance will change into FACTORY RESET guidance after approximately 3 seconds. By once again pressing the [DEGAUSS] key after this, setting will be carried out ([\*]will be dispalyed as status) and the data will be copied. By carrying out this operation, the selection items of the menu and the adjustment values will be reset to the standard conditions, so please be careful. If this operation is carried out once, it cannot be carried out again, but the FACTORY SET FLAG in the service mode can be set to 1.

# PVM-1353MD/1453MD

# ROM INITIAL WRITING VALUE OF SERVICE DATA

# SERVICE MAP Ver 1.0MD (1 - 98)

No.	SERVICE ITEM		STD	No.	SERVICE ITEM		STD
1	NOR 50 DEF	H FREQUENCY	144	61	USER C/T ORG	BIAS <red></red>	650
2		VIDEO PHASE	118	62		BIAS <green></green>	512
3		V SIZE	179	63		BIAS <blue></blue>	352
4	NOR 60 DEF	H FREQUENCY	150	64		GAIN <red></red>	726
5		VIDEO PHASE	121	65		GAIN <green></green>	700
6		V SIZE	177	66		GAIN <blue></blue>	520
7	NOR DEF	V CENTER	111	67	W/B	SUB CON	180
8		H SIZE	112	68		SUB BRIGHT	69
9		PIN PHASE	103	69	OTHER	OSD POSITION	110
10		PIN AMP	110	70		SPLIT PHASE	0
11		LOWER PIN AMP	128	71		V HOLD	128
12		U/L PIN	134	72		H BLANKING	74
13		SEXY	128	73		H BLANKING <50>	63
14		V LINEARITY	140	74		O/S UPPER V BLK <50>	21
15		V BOW	32	75		O/S LOWER V BLK <50>	73
16		LOWER V BOW	32	76		V BLANKING <60>	117
17		V ANGLE	32	77		O/S UPPER V BLK <60>	26
18	U/S DEF	V SIZE <50>	149	78		O/S LOWER V BLK <60>	83
19		V SIZE <60>	146	79		HP POSITION	140
20		H SIZE	100	80		HP WIDTH	90
21		PIN PHASE	109	81	SYSTEM	358TRAP FILTER	0
22		PIN AMP	87	82		CAPTION VISION	0
23	O/S DEF	V SIZE <50>	192	83		COMPONENT LEVEL	2
24		V SIZE <60>	189	84		NTSC SETUP LEVEL	0
25		H SIZE	211	85		CHROMA SET UP	0
26	-	PIN PHASE	97	86		COLOR SYSTEM DISPLAY	0
27		PIN AMP	127	87		COLOR TEMPERATURE	0
28		LOWER PIN AMP	111	88		USER PRESET	0
29		U/L PIN	132	89		LANGUAGE	0
30		LOWER V BOW	32	90		RGB MODE A	0
31	COMPONENT	SUB PHASE	131	91		RGB MODE B	0
32		SUB CHROMA <normal></normal>	97	92		AGING MODE	0
33		SUB CHROMA <smpte></smpte>	157	93		MODEL	5
34	i .	R-Y LEVEL	157	94		COLOR TEMP DISP 1	65
35	NTSC	BURST GATE PULSE WIDTH	36	95		COLOR TEMP DISP 2	56
36		CRYSTAL	54	96	· · · · · · · · · · · · · · · · · · ·	REMOTE ADDRESS	1
37		PHASE	103	97		RESERVED ·	0
38		B-Y PHASE	230	98		FACTORY SET FLAG	0
39		CHROMA	118	99			
40		R-Y LEVEL	105	100			
41	PAL	CRYSTAL	65	101			
42	1,120	PHASE	76	102			
43		B-Y PHASE	125	103			
44		CHROMA	135	104			
45		R-Y LEVEL	123	105			
46	C/T1 ??00K	3200K SW	0	106			
47		BIAS <red></red>	554	107	<del></del>		
48		BIAS <green></green>	512	108			
49		BIAS <blue></blue>	519	109			
50		GAIN <red></red>	668	110	· · · · · · · · · · · · · · · · · · ·		
51		GAIN <green></green>	700	111			
52		GAIN <blue></blue>	633	112			
53	C/T2 ??00K	3200K SW	0	113			
54	J, 12 . 1 . 0 . 1	BIAS <red></red>	650	114			
55		BIAS <green></green>	512	115	1		
56		BIAS <blue></blue>	352	116			
57		GAIN <red></red>	726	117			
58		GAIN < GREEN>	700	118			
59		GAIN <blue></blue>	520	119			
60	USER C/T ORG	3200K SW	0	120		· · · · · · · · · · · · · · · · · · ·	
	10001.0/101.0	1			<del></del>		L

#### **PREPARATIONS (2)**

\* When composite video or component signals are supplied, they must be supplied as below.

Signal		Signal Contents	Standard Level P-W
COMPOSITE VIDEO	358NT	100% WHITE	0.714V
		75% WHITE	0.536V
	PAL	100% WHITE	0.7V
		75% WHITE	0.525V
COMPONENT	BETA 0	100% WHITE Y	0.7V
		75% WHITE Y	0.525V
		75% COLOR B-Y, R-Y (This item only p-p)	0.7V
	SMPTE	100% WHITE Y	0.7V
		75% WHITE Y	0.525V
		75% COLOR B-Y, R-Y (This item only p-p)	0.525V
AUDIO		-0.5dBs	0.436Vrms

\* In this document, terms inside boxes \_\_\_\_\_ are names of service mode adjustments.

Example 60H-FREQ

- \* After making adjustments in service mode, write the adjustment data before cutting off the power. If you cut off the power without writing, the results of your adjustments are all lost.
- \* Standard inspection conditions

Unless specifically specified otherwise in this document, the following conditions are used for adjustments and inspections.

**APERTURE** 

MIN

**BRIGHT** 

50% (Center click)

**CHROMA** 

50% (Center click)

PHASE

**CONTRAST** 

50% (Center click) 80% (Center click)

**VOLUME** 

50%

#### 3-2. WRITING MODEL DATA

1. In service mode, write in the following model data at MODEL

PVM-1353MD/1953MD ..... 5

PVM-1453MD/2053MD · · · · · 1

2. In service mode, write in the following data at COLOR TEMP DISP 1 .

PVM-1353MD/1453MD----- 65

PVM-1953MD/2053MD ..... 65

3. In service mode, write in the following data at COLOR TEMP DISP 2

> PVM-1353MD/1453MD ..... 56 PVM-1953MD/2053MD ..... 56

#### 3-3. PICTURE OUTPUT

- 1. Set the AC input voltage.
  - (1) Input the video and audio signals to the corresponding terminals on the connector panel.
  - (2) Set the sliduck AC voltage as shown on the right.

Model	Voltage	
PVM-1353MD/1953MD	AC120 $\pm$ 3V (Distortion rate : 3% or less)	
PVM-1453MD/2053MD	AC220 ± 3V (Distortion rate : 3% or less)	

#### 3-4. LANDING ADJUSTMENT

- 1. Preparations
- 1) To reduce the influence of geomagnetism, face the set's CRT screen east or west.
- 2) Loosen the deflection yoke fixture and lower the deflection yoke to the rear.
- 3) Switch on the Power switch and degauss with the degausser.
- 4) Adjust the deflection yoke tilt.
- 2. Adjustment
- 1) CONT ····· MIN

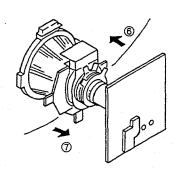
BRT..... Position providing good vision

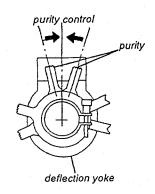
- 2) The rough adjustments of the white balance, G2, and convergence must be completed already
- 3) Set green-only.
- 4) Adjust the purity knob so that the green comes to the center of the screen. Make the red and blue about even. Fig. 1
- 5) Switch to blue only, red only, and green only and verify each. Fig. 1, 2, and 3
- 6) Bring the deflection yoke gradually forward and adjust the deflection yoke so that the R and B at both sides of the screen become green. Fig.  $2 \rightarrow 3$
- 7) If the deflection yoke comes too far forward, you will see the pattern shown in Figure 4. If that happens, lower the deflection yoke to the rear. Fig.  $4 \rightarrow 3$
- 8) Switch the single color switch to B and verify the single color. Fig. 6 ·
- 9) Switch the single color switch to R and verify the single color. Fig. 9
- 10) When one of the colors does not become the single color correctly, check by repeating Items 7 and 8 based on the single color not coming into adjustment.

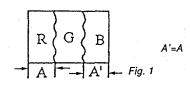
If you can not obtain landing in the comers, paste on magnets.

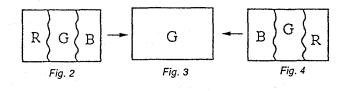
- 11) Switch to an all-white signal and check the uniformity.
- 12) When the deflection yoke position is determined, fasten it with the fixture.

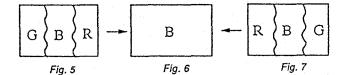
#### PVM-1353MD/1453MD











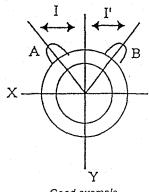
#### 3-5. CONVERGENCE ADJUSTMENT

1. Input a dot pattern signal. CONT ..... Position providing good vision BRT ..... MIN

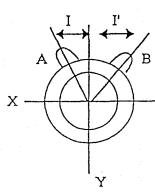
- 2. Align the horizontal R, G, and B dots at the center of the screen with the H-STAT VR. (\*1)
  - \*1: If the H-CENTER adjustment was after the H-STAT adjustment, re-adjust the H-STAT.

(The H-CENT VR changes the H-STAT too.)

- 3. Align the R, G, and B at the center of the screen with the V-STAT magnets. (\*2)
  - \*2: After the V-STAT adjustment, paint on the knobs to lock them.



Good example

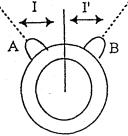


Bad example

V-STAT magnet knobs While keeping the angles for A and B equal (I=I'), align the vertical convergence.

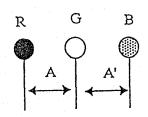
If the A and B knobs are not symmetrical (I ≠ I'), this has bad effects. The focus may deteriorate and beam striking may occur.

4. For HMC, use the 6-pole magnet to adjust the R and B dots to be symmetrical left and right about the G dot. (\*1)



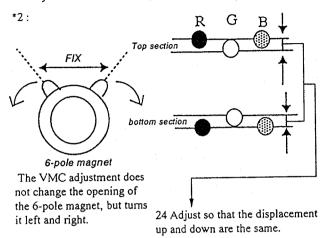
6-pole magnet

The HMC adjustment changes the opening of the 6-pole magnet.

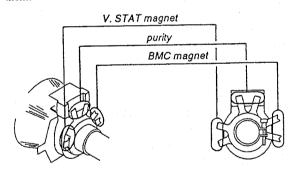


Adjust the 6-pole magnet so that A=A'. You must maintain the relationship I≠I' while moving the magnet.

5. For VMC, use the 6-pole magnet to adjust the R and B dots to be symmetrical above and below the G dot. (\*2)



- 6. Adjust by repeating the adjustments in Items 2 through 5. (\*3)
  \*3: The above adjustment may affect the landing, so after this adjustment, check the landing again.
- 7. After the adjustment is complete, paint on the knobs to lock them.

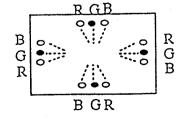


# 3-6. DEFLECTION YOKE NECK ROTATION ADJUSTMENT

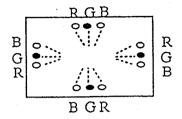
If there is misconvergence at both sides on the X or Y axis of the screen, turn the neck of the deflection yoke in the direction of the arrow to reduce the misconvergence for the entire CRT screen to within the tolerance.

1. Reverse misconvergence pattern

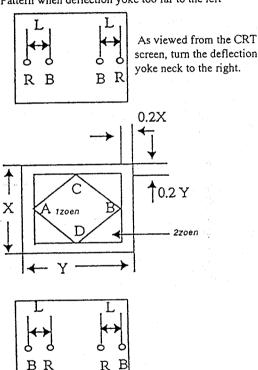
Turn the deflection yoke neck down.



Positive misconvergence pattern Turn the deflection yoke neck up.

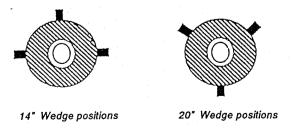


Pattern when deflection yoke too far to the left



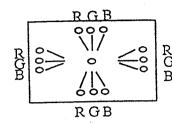
Pattern when deflection yoke too far to the right

Insert the three wedges in the deflection yoke and CRT funnel surface to fasten the deflection yoke.

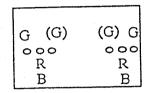


# PVM-1353MD/1453MD

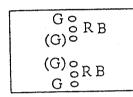
3. The pattern below can not be corrected by turning the neck.



\* Gun rotation
The beam is twisted at both
sides on the X axis and Y
axis.



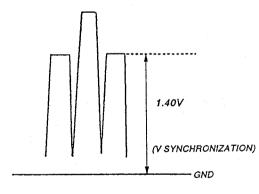
\* HCR large (small)
At both sides of the screen,
the G raster horizontal
component is wider
(narrower) than those of the
R and B rasters.

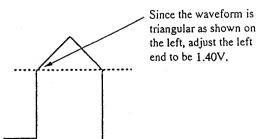


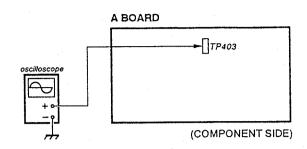
\* VCR large (small)
At both sides of the screen,
the G raster vertical
component is wider
(narrower) than those of
the R and B rasters.

#### 3-7. G2 ADJUSTMENT

- 1. Input a 525 monoscope signal.
- 2. Connect the oscilloscope to A board TP403.
- 3. Of the three reference pulses, measure the lowest one.
- 4. With the Screen VR, adjust so that left end of the waveform is:  $1.40 \pm 0.1V$







#### 3-8. WHITE BALANCE ADJUSTMENT

For measuring equipment, use a color analyzer. (for example from Minolta, etc.)

- Input a 525 monoscope signal. (Input from Line A with no burst.)
- 2. Set:

CONT ..... 0%

BRT..... 50%

On a 20-tone gray scale, adjust service mode SUB BRIGHT so that

0 and 5 IRE  $\rightarrow$  cut off 10 IRE  $\rightarrow$  slight glow

- 4. Input 525 all-white (no burst).
- 5. Set CONT to 80%.
- 6. Adjust the all-white signal luminance so that the screen luminance is 3 NIT.
- 7. Press MENU and select COL TEMP/SEL.
- 8. Select T1: 6500K.
- 9. Put the unit into service mode. (\*1)
  - \*1 : Set 3200 K SW to 0 for both T1 and T2.
- 10. Adjust to the standard values with C/T1 XX00K BIAS. (G must be fixed at "512".) (\*2)
  - \*2: Adjust the cut-off to be 3 NIT.

Spec. 6500K + 8M PCD

- 11. Switch the all-white signal luminance to 100 IRE.
- 12. Adjust to the Standard values with <RED> and <BLUE> of C/T1 GAIN XX00 K].

(G must be fixed at "700")

- 13. Repeat Items 10, 11 and 12 until the adjustment is complete, then write the adjustment data.
- 14. Press MENU and select COL TEMP/BAL.
- 15. Select T2: 5600K.
- 16. In the same manner as in Items 10, 11, 12 and 13 make the C/T2 5600K BIAS and C/T2 5600K GAIN adjustments.

  Spec. 5600K + 8M PCD

#### 3-9. SUB BRT ADJUSTMENT

- 1. Input a 525 monoscope signal.
- 2. CONT ······ MIN

BRT..... CENTER (50%)

- 3. Put the unit into service mode and select SUB BRIGHT
- 4. Adjust SUB BRIGHT so that 10 IRE gives a slight glow and 10 IRE gives cut off.

## 3-10. FOCUS ADJUSTMENT

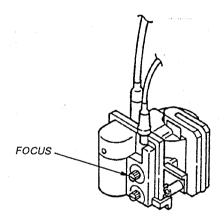
Note: PVM-1353MD/1453MD are adjusted with RV707 on the C board.

PVM-1953MD/2053MD are adjusted with the RV at the top of the FBT main nuit.

1. Input a 525 monoscope signal. (PVM-1353MD/1953MD ONLY)

Input a 625 monoscope signal. (PVM-1453MD/2053MD ONLY)

- 2. Adjust the focus to optimize the focus on the characters "30" at the center of the screen.
- 3. Switch to an all-white signal and check the uniformity.



# SECTION 4 SAFETY RELATED ADJUSTMENT

The following adjustments should always be performed when replacing the following components (marked with  $\blacksquare$ ,  $\square$  on the schematic diagram).

+B detection ····· R1535
Tertiary coil detection ··· R1536

Part replaced ( )

Hold Down Circuit ...... A board IC500, IC507, D501,

D533, C506, C512, C523, C549, C592, R506, R518, R518, R518, R518

R519, R551, R1536, R1537, R1560, T501

Beam Current Protector

Circuit ...... A board Q500, Q511, C513, R508,

R515, R516, R517

B+ Regulator Circuit ······ A board R1535

G board IC602, C603

# B+ VOLTAGE CONFIRMATION

Standard: less than 117.0VDC

Check Condition: Input voltage: 110 ± 2 VAC

Note: Use NF Power Supply or make sure that

distortion factor is 3% or less.
Input signal: Monoscope signal

Controls : BRT & CONT ⇒ Initial reset

# HOLD-DOWN CIRCUIT VOLTAGE CONFIRMATION

(1) Hold down circuit (B+ Actuation)

a) When IABL =  $600 \pm 50 \mu$  A, raster goes out at less than  $130 \pm \frac{60}{10}$  V by applying an external DC voltage to IC500 ② pin (TP502).

Input signal: ALL white

b) When IABL =  $40 \pm 20 \mu$ A, raster goes out at less than 132  $\pm \frac{\alpha_0}{15}$  V by applying an external DC voltage to IC500 ② pin (TP502).

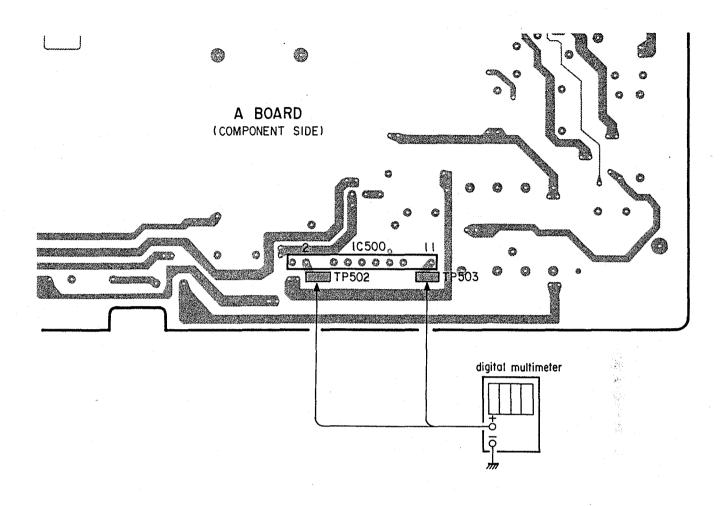
Input signal: Dot

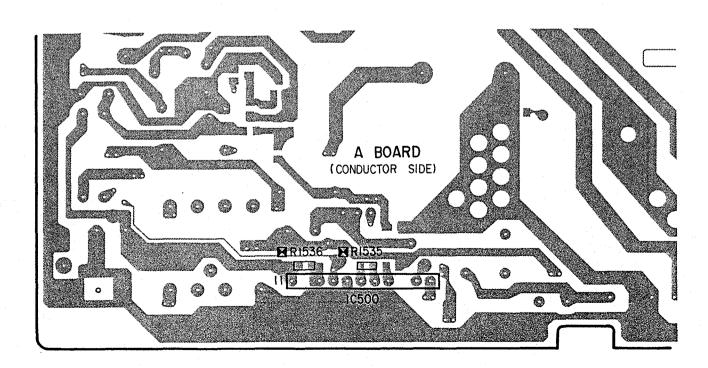
- - a) When IABL =  $600 \pm 50 \mu$  A, raster goes out when applying less than DC 146.7V voltage to the ① pin (TP503) of IC500 from outside.

Input signal: ALL white

b) When IABL =  $40 \pm 20 \mu$ A, raster goes out when applying less than DC 147.0V voltage to the ① pin (TP503) of IC500 from outside.

Input signal: Dot

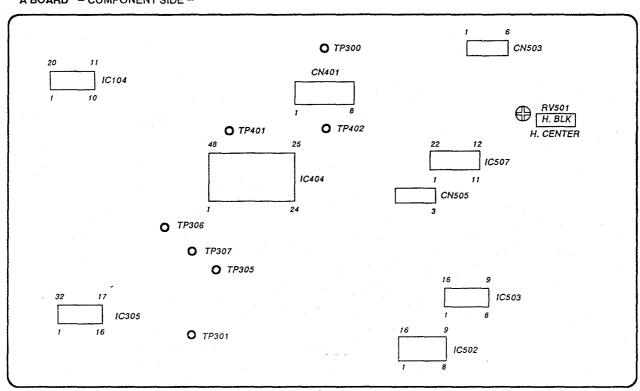




# SECTION 5 CIRCUIT ADJUSTMENTS

## 5-1. A BOARD ADJUSTMENT

A BOARD - COMPONENT SIDE -



A BOARD - CONDUCTOR SIDE -

\_\_\_\_\_ D516

#### I. Preparations

\* When composite video or component signals are supplied from connector CN301, they must be supplied taking into account the effect of the Q board as indicated on the right.

The levels of the signals supplied must be within  $\pm 2\%$  of the standard on the right.

Signal		Signal Contents	Standard Level (Pedestal-White)	Reduction Ratio	Connector Feed Level (Pedestal-White)
		100% WHITE	0.714V	93%	0.664V
	358NT	75% WHITE	0.536V	93%	0.498V
COMPOSITE	330111	BURST (GREEN) (This item only P-P)	286mV (632mV)	94% (94%)	269mV (594mV)
VIDEO (75% COLOR BAR)		100% WHITE	0.7V	94%	0.651V
,		75% WHITE	0.525V	94%	0.488V
	PAL PAL BURST (GREEN) (This item only P-P)	300mV (664mV)	94% (94%)	282mV (624mV)	
		100% WHITE Y	0.7V	94.8%	0.664V
		75% WHITE Y	0.525V	94.8%	0.498∨
COMPONENT	BETA0	75% COLOR B-Y, R-Y (This item only P-P)	0.7∨	94.8%	0.664∨
(75% COLOR BAR)		100% WHITE Y	0.7V	94.8%	0.664V
		75% WHITE Y	0.525V	94.8%	0.498∨
	SMPTE	75% COLOR B-Y, R-Y (This item only P-P)	0.525V	94.8%	0.498V

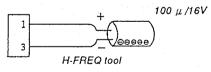
* In this c	locument, terms inside boxes	are names	of
service i	node adjustments.		
Example	60H-FREO		

\* CONT 80% is the center click position for the user control.

## II. Deflection System Adjustment

# 1. ADJUSTING THE HORIZONTAL OSCILLATION FREQUENCY

- 1. Input a 525 monoscope signal.
- 2. Set:
  CONT..... 80%
  BRT.....50%
- 3. Put the unit into service mode.
- 4. Drop A board IC507 Pin 1 to ground with a  $100\mu/16V$  electrolytic capacitor. (Ground must use CN505 Pin 3.) Or plug the H-FREQ tool into CN505.
- 5. Adjust 60H-FREQ so that the diagonal lines on the screen become vertical lines. (Fig. 1)
- 6. Input a 625 monoscope signal.
- 7. Adjust 50H-FREQ so that the diagonal lines on the screen become vertical lines. (Fig. 1)



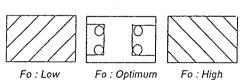


Fig. 1

#### 2. H-BLK Adjustment

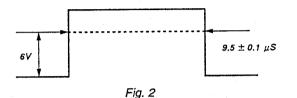
1. Input a 525 monoscope signal.

2. Set:

CONT ..... 80%

BRT .... 50%

- 3. Put the unit into service mode.
- 4. Observe the anode of D516 or TP300 with the oscilloscope and adjust H-BLK to obtain the waveform in Fig. 2.



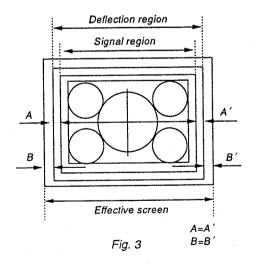
# 3. PICTURE PHASE Adjustment

- 1. Input a 525 monoscope signal.
- 2. Put the unit into under scan mode.
- 3. Set:

CONT ····· Min.

BRT.....Max.

- 4. Put the unit into service mode.
- 5. Use U/S H SIZE to adjust the size of the monoscope white frame to be about 1 cm to the inside of the limits of the effective screen.
- 6. Turn RV501 (H-CENT) and adjust so that B=B'.
- 7. Adjust 60 VIDEO PHASE so that the signal region comes to the center (A=A') of the deflection region. (Fig. 3)



- 8. Input a 625 monoscope signal.
- 9. Adjust 50 VIDEO PHASE in the same manner.

#### 4. V·BLK Adjustment

- 1. Input a 525 monoscope signal.
- 2. Put the unit into under scan mode.
- 3. Set:

CONT ····· Min.

BRT.....Max.

- 4. Put the unit into service mode.
- 5. Adjust V BLK (60) so that before 0.5H of the white frame on the top of the monoscope is barely unblocked.
- 6. End under scan mode and put the unit into Normal 16:9
- 7. Input a 625 monoscope signal.
- 8. Adjust V BLK (50) in the same manner as in 5 above.

#### 5. VERTICAL DEFLECTION SECTION Adjustment

Normal V. Size Standards

	525	625
4:3	11.75 ± 0.2 frames	$11.2 \pm 0.2$ frames

- 1. Input a 525 monoscope signal.
- 2. Set:

CONT ..... 80%

BRT.....50%

- 3. Put the unit into service mode.
- 4. Roughly adjust 4: 3 NOR V-SIZE 60 so that the size becomes to 12 frames.

Adjust the vertical linearity with V-LIN

Adjust the vertical centering with V-CENT 60 . (Refer to Note 1.)

Adjust 4: 3 NOR V-SIZE 60 so that the size becomes to the standard value.

- 5. Input a 625 monoscope signal.
- 6. Roughly adjust 4: 3 NOR V-SIZE 50 so that the size becomes to 11 frames.

Adjust the vertical centering with V-CENT 50. (Refer to Note 1.)

Adjust 4: 3 NOR V-SIZE 50 so that the size becomes to the standard value.

#### Note 1:

Reconfirmation is necessary for V. CENT adjustment after V. LIN adjusted.

# 6. HORIZONTAL DEFLECTION SECTION Adjustment (NORMAL SCAN Adjustment)

- 1. Input a 525 monoscope signal.
- 2. Set:

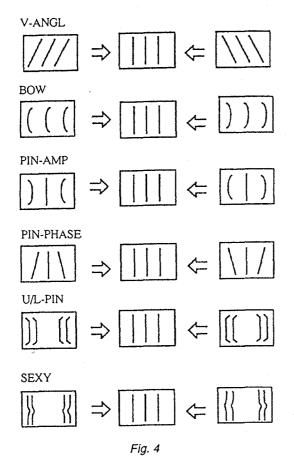
CONT ..... 80%

BRT.....50%

- 3. Put the unit into service mode.
- 4. Roughly adjust NOR H SIZE so that the size is 15.75 frames.
- 5. Adjust the horizontal deflection section with NOR PIN AMP NOR PIN PHASE NOR U/L PIN SEXY V BOW V ANGL NOR H SIZE LOW PIN AMP LOW V BOW. (While adjusting the parallelogram distortion and bow distortion with V. ANGL and BOW, adjust the horizontal and vertical lines of the screen becomes straight lines.)
- 6. Input a 625 monoscope signal.
- 7. Confirm that the screen is normal.

#### Normal H.Size Standards

	525	625
4:3	$15.75 \pm 0.2 \text{ frames}$	$15.0 \pm 0.2$ frames



# 7. HORIZONTAL DEFLECTION SECTION Adjustment (UNDER SCAN Adjustment)

Standard value

		525	625
	U/S H-SIZE	252 ± 2mm	
14"	U/S V-SIZE	188 ± 2mm	
	U/S H-SIZE	364 ± 3mm	
20"	U/S V-SIZE	272 ± 3mm	

- 1. Input a 525 monoscope signal.
- 2. Set:

CONT .....80% BRT .....50%

- 3. Set to U/S mode.
- 4. Set to service mode.
- 5. Adjust U/S V. SIZE <60> so that UNDER V. SIZE becomes within the standard.
- 6. Adjust U/S. H. SIZE so that UNDER H. SIZE becomes within the standard.
- 7. Adjust U/S PIN AMP and U/S PIN PHASE. (Steps 5., 6. and 7. explains tracking adjustment.)
- 8. It's not favorable when the square white line is bulging out of the effective screen after adjusted.
- 9. Input a 625 monoscope signal.
- 10. Adjust U/S V. SIZE <50> becomes within the standard value.

# 8. OVER SCAN Adjustment

- 1. Input a 525 monoscope signal.
- 2. Set:

CONT .....80% (center click) BRT .....50%

- 3. Set to O/S mode.
- 4. Set to service mode.
- 5. Adjust O/S H. SIZE and O/S V. SIZE <60> so that H. SIZE becomes 13.6 frames and V. SIZE becomes 10.2 frames
- 6. Adjust horizontal deflection section with O/S PIN AMP
  O/S PIN PHASE O/S U/L PIN O/S LOW PIN AMP
  O/S LOW V. BOW.
- 7. Input a 625 monoscope signal.
- 8. Adjust O/S V SIZE <50> becomes within the standard value.

#### Standard value

	525	625
O/S H. SIZE	13.6 ± 68 frames	$13.0 \pm c^s$ frames
O/S V. SIZE	10.2 ± confirme frames	9.8 ± cs frames

# O/S PIN . AMP O/S PIN . PHASE O/S U/L. PIN O/S LOW PIN . AMP O/S LOW BOW O/S LOW BOW O/S LOW BOW O/S LOW BOW

Fig. 5

#### 9. OSD POSITION Adjustment

- 1. Input a 525 color bar signal.
- Connect the oscilloscope probes to TP300 (H-BLK) and IC104 Pin 14.
- 3. Adjust OSD POSITION so that the gap between the rising edge of the H-BLK waveform and the right edge character (the right edge of the " " for service mode OSD POSITION ) is: 57 µS ± 0.2 µS

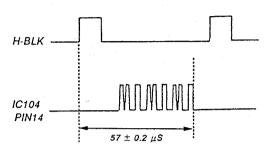


Fig. 6

## 10. WRITING THE ADJUSTMENT

- 1. Write the adjustment results into memory.
  - Note: If you cut off the power before writing, the results of your adjustments are all lost.

## III. SIGNAL SYSTEM ADJUSTMENT

## 1. SUB CON ADJUSTMENT

\*This adjustment ought to have completed before HUE adjustment of NTSC 358/443 and PAL.

1. Input a vertical white line signal. Note: Use a vertical white line signal (525 no burst, H width 3µS, 100IRE).

CONT ..... 80% BRT ..... 50%

- 3. Connect the oscilloscope probe to A board CN401 Pin 3.
- 4. Put the unit into service mode.
- 5. Adjust SUB BRT.
- 6. Adjust the pedestal or the distance between the sync tip and white with SUB CON (4:3 NOR)

SUB CON (4:3 NOR) (Fig. 7).

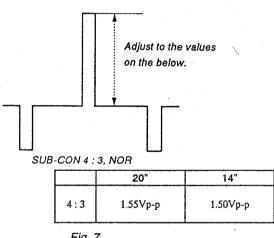
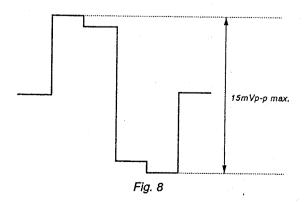


Fig. 7

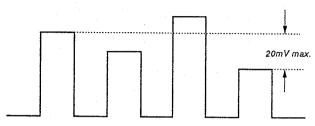
#### 2. SUB PHASE Adjustment

- 1. Input a component color bar (R-Y) and EXT SYNC (Beta 0 level signal).
- 2. Put the unit into Ext Sync mode.
- 3. Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 4. Put the unit into service mode.
- 5. Adjust SUB PHASE to minimize the output waveform (15 mVp-p max.) (Fig. 8)



#### 3. SUB CHROMA Adjustment

- 1. Input a component color bar (R-Y, Y, B-Y). (Beta 0 level signal).
- From the menu, make the Component Level Beta 0.
- 3. Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 4. Put the unit into service mode.
- 5. Using SUB CHROMA NORMAL, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 9)

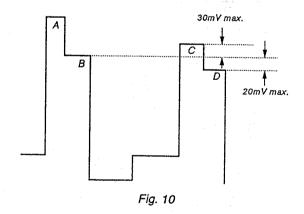


Adjust so that the levels of the first peak and the fourth peak are the same.

Fig. 9

# 4. R-Y LEVEL ADJUSTMENT

- 1. Input a component color bar (R-Y, Y, B-Y). (Beta 0 level
- 2. From the menu, make the Component Level Beta 0.
- 3. Connect the oscilloscope probe to IC404 Pin 41 or TP401.
- 4. Put the unit into service mode.
- 5. Using R-Y LEVEL COMPONENT, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 10)



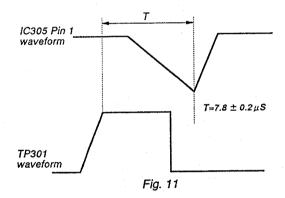
Adjust so that B=D above (20 mV max.) Check that the difference between D and C is no greater than 30 mV

# 5. SMPTE SUB COLOR Adjustment

- 1. Input a component color bar (R-Y, Y, B-Y). (SMPTE level signal).
- 2. From the menu, make the Component Level N10/SMPTE.
- 3. Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 4. Put the unit into service mode.
- 5. In the same manner as in 4-5, adjust SUB CHROMA N10/SMPTE.

#### 6. BURST GATE PULSE WIDTH Adjustment

- 1. Input an NTSC color bar.
- 2. Connect the oscilloscope probes to TP301 (COMP-SYNC) and Q363 or IC305 Pin 1. (Be careful! IC305 Pin 1 is a high-impedance line.)
- 3. Put the unit into service mode.
- 4. Adjust BGP WIDTH so that the output waveform has the relationship shown in Fig. 11.



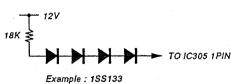
#### 7. VXO Adjustment

#### 1. X'tal 358

- 1) Input an NTSC color bar.
- 2) Connect the frequency counter to IC305 Pin 21.
- 3) Put the unit into service mode.
- 4) Connect the circuit on the below to IC305 Pin 1.
- 5) Adjust CRYSTAL 358 so that the counter reading meets the standard below. (You can also just adjust for where the color flicker stops.)

X'tal 358

Standard level 3579545 ± 20Hz



(For connecting to Pin 1, have the four diodes as close to Pin 1 as possible to reduce the length of the wires.)

# 2. X'tal 443

- 1) Input a 443 NTSC color bar.
- 2) Connect the frequency counter to IC305 Pin 21.
- 3) Put the unit into service mode.
- 4) Connect to IC305 Pin 1 in the same manner as in 1-4).
- 5) Adjust Crystal 443 in the same manner as in 1-5).

#### X'tal 443

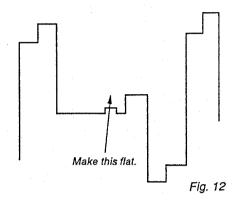
Standard level

4433619 ± 20Hz

#### 8. NTSC COLOR DEMODULATION Adjustment

#### 1. NTSC PHASE

- 1) Input NTSC color bar signal.
- 2) Connect the oscilloscope probe to TP306.
- 3) Set to service mode.
- 4) Adjust NTSC PHASE so that the output waveform burst section becomes a straight line. (Fig. 12)



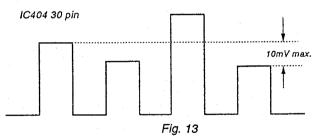
#### 2. NT358 B-Y PHASE

The phase adjustment must be carried out before the chroma adjustment.

- Input an NTSC color bar. (Input only the R-Y component. Have B-Y and Y off.)
- 2) Connect the oscilloscope probe to TP305.
- 3) Put the unit into service mode.
- 4) Adjust B-Y PHASE NTSC 358 so that the color components form a straight line.

#### 3. NT358 CHROMA (NORMAL)

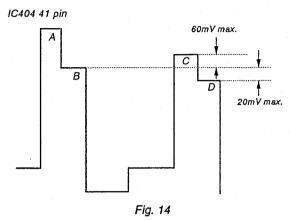
- 1) Input an NTSC color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 3) Put the unit into service mode.
- 4) Using NTSC CHROMA NORMAL, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 13)



Adjust so that the levels of the first peak and the fourth peak are

# 4. NTSC 358 R-Y LEVEL

- 1) Input an NTSC358 color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 41 or TP401.
- 3) Put the unit into service mode.
- 4) Using R-Y LEVEL NTSC 358, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 14)



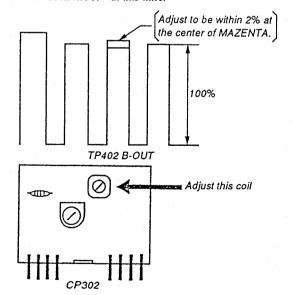
Adjust so that B=D above (20 mV max.) Check that the difference between B and C is no greater than 60 mV.

#### 5. PAL LINE CRAWLING

Note: Perform before PAL PHASE ADJUSTMENT.

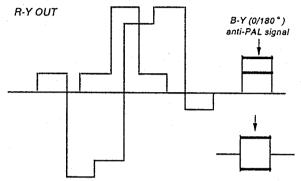
- 1) Input a PAL color bar.
- 2) Connect the oscilloscope probe to TP402 (B-OUT)
- 3) Adjust the coil of CP302 so that the shaking of MAZENTA wave form become minimum.

Do not touch the RV at this time.



#### 6. PAL PHASE (NORMAL)

- 1) Input a PAL SP color bar.
- 2) Connect the oscilloscope probe to TP306.
- 3) Put the unit into service mode.
- 4) Adjust PHASE PAL NOR so that the B-Y anti-PAL signal waveform is 0. (Fig. 15)



\* Varies every H, although slightly, so adjust so that the average is 0.

Fig. 15

#### 7. PAL B-Y PHASE

- 1) Input a PAL SP color bar.
- 2) Connect the oscilloscope probe to TP305.
- 3) Put the unit into service mode.
- 4) Adjust B-Y PHASE PAL so that the B-Y anti-PAL signal waveform is 0. (Fig. 16)

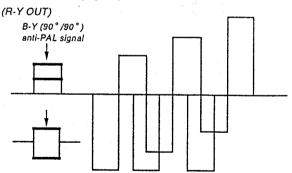
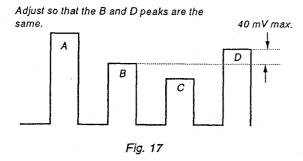


Fig. 16 \* Varies every H, although slightly, so adjust so that the average is 0.

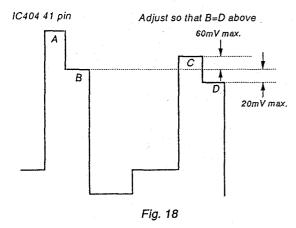
## 8. PAL CHROMA (NORMAL)

- 1) Input a PAL color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 3) Put the unit into service mode.
- 4) Adjust CHROMA PAL NOR so that the tops of the waveform line up. (Fig. 17)



#### 9. PAL R-Y LEVEL

- 1) Input a PAL color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 41 or TP401.
- 3) Put the unit into service mode.
- 4) Adjust R-Y LEVEL PAL so that the tops of the waveform line up as in the diagram below. (Fig. 18)



## 9. Writing the adjustment result

1. Write the adjustment results into memory.

## 5-2. G BOARD ADJUSTMENT

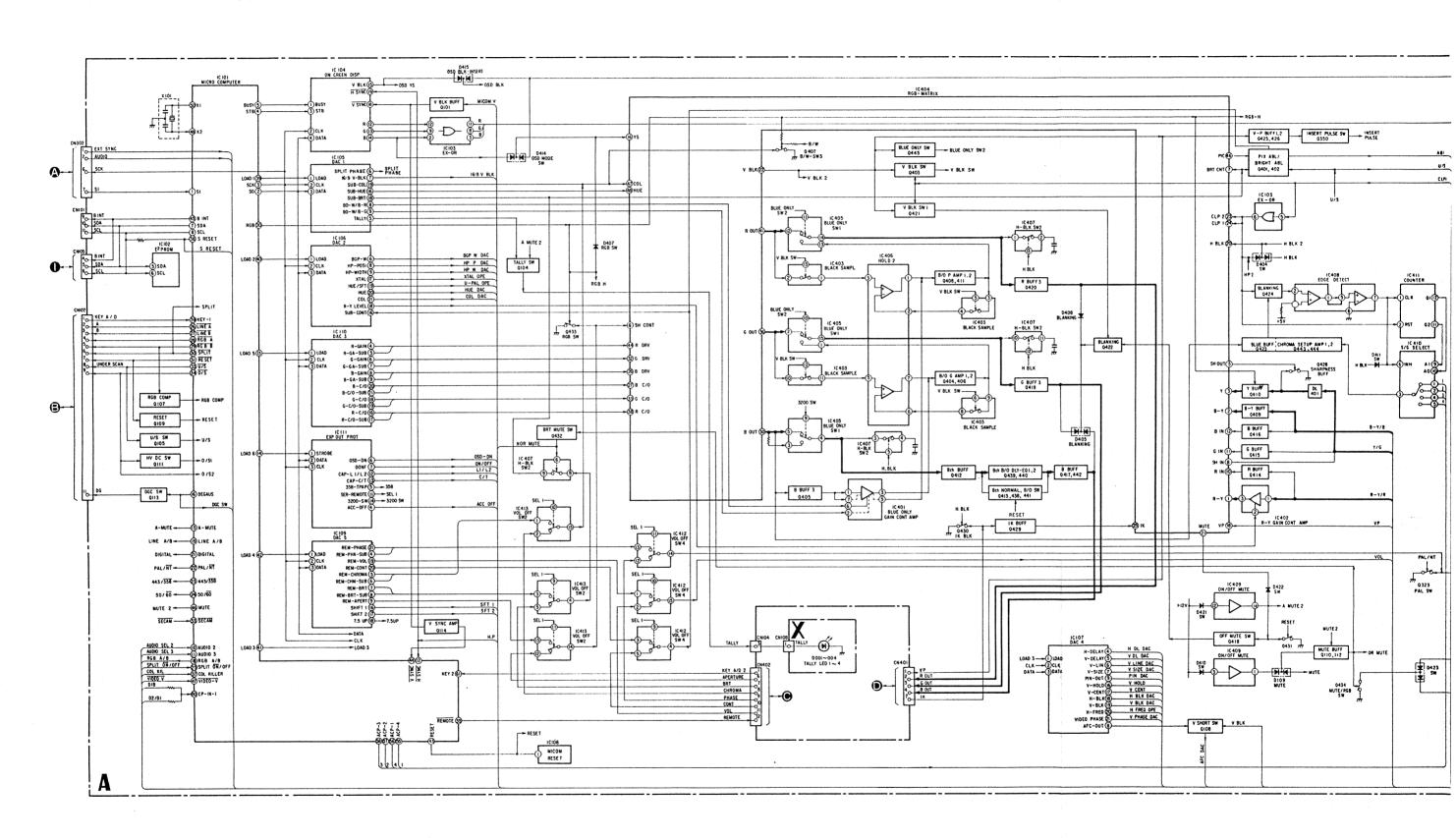
1. Checking the output lines

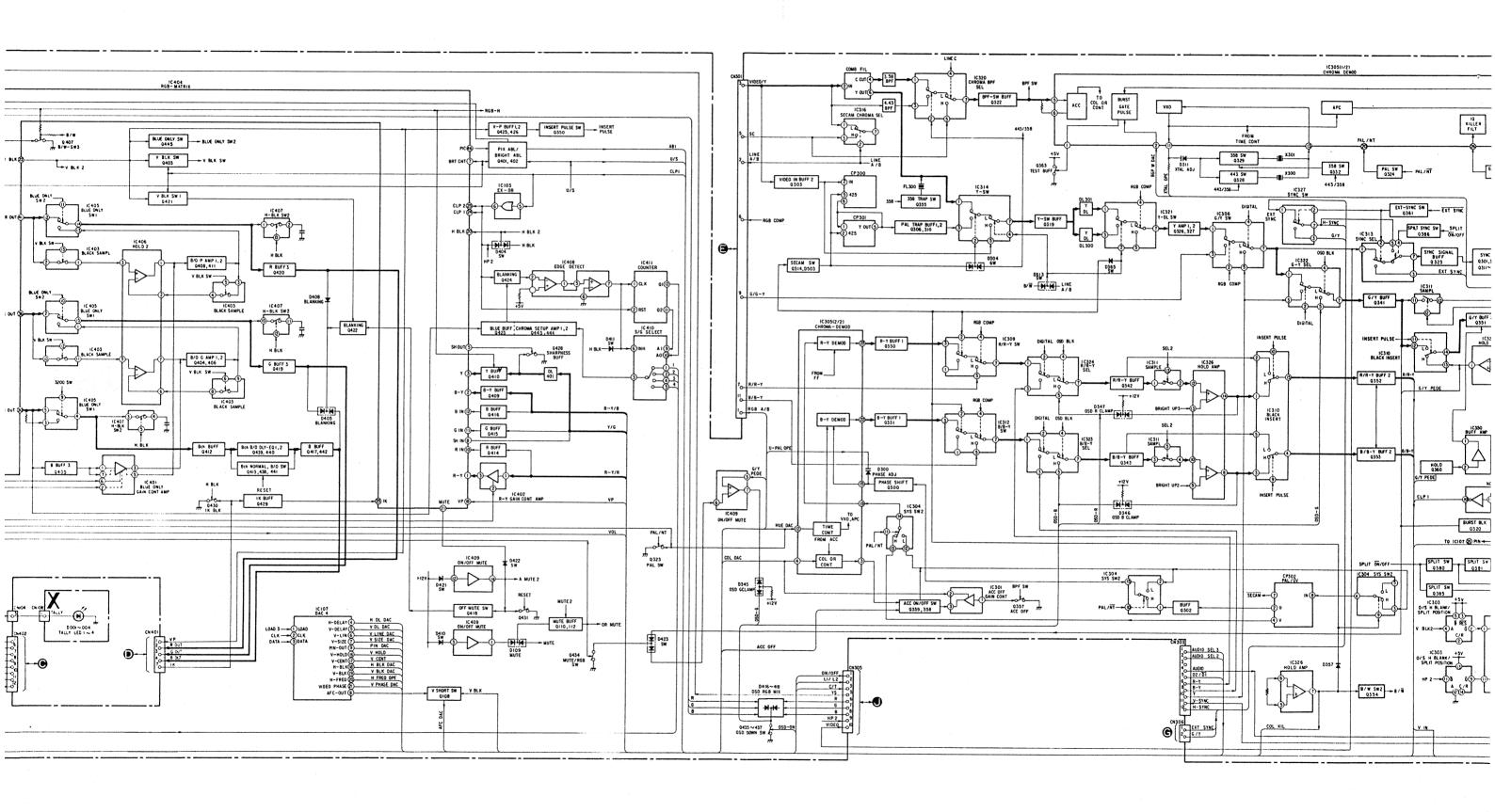
Check that the output lines meet the standards below.

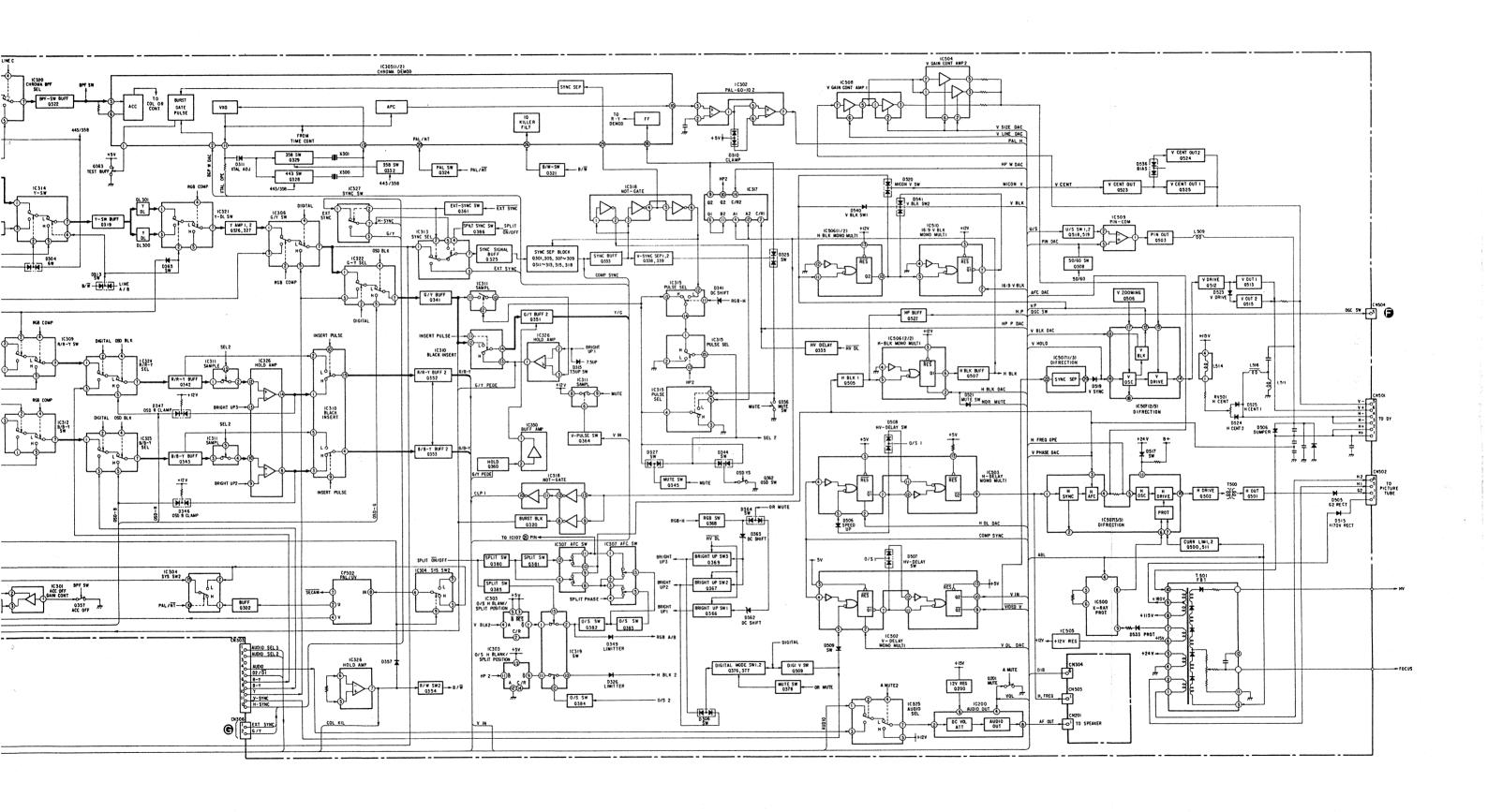
$16.0 \pm 1.0 $ V
$5.0 \pm 0.3 V$
$115 \pm 0.1 V$
$5.0 \pm 0.5 V$

# SECTION 6 DIAGRAMS

6-1. BLOCK DIAGRAMS (1)

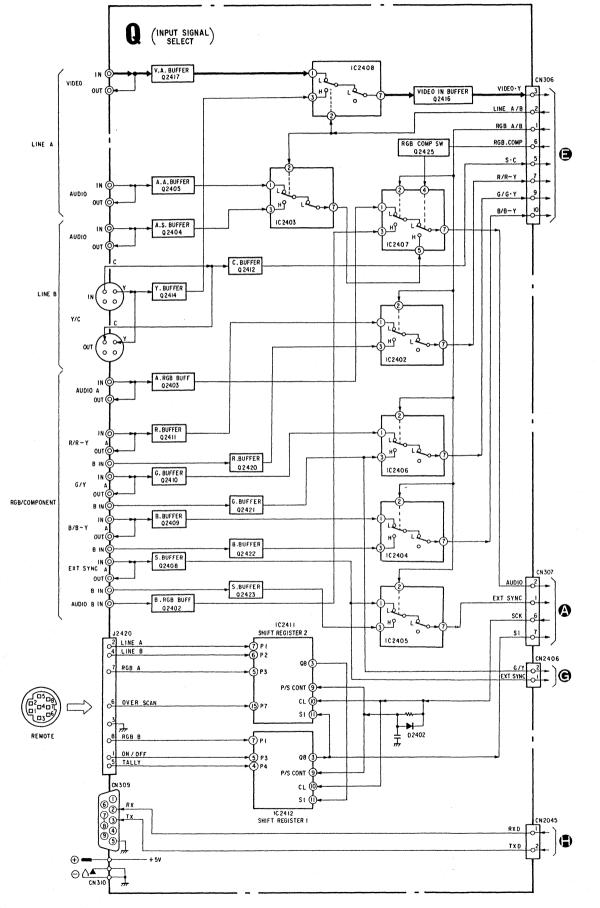


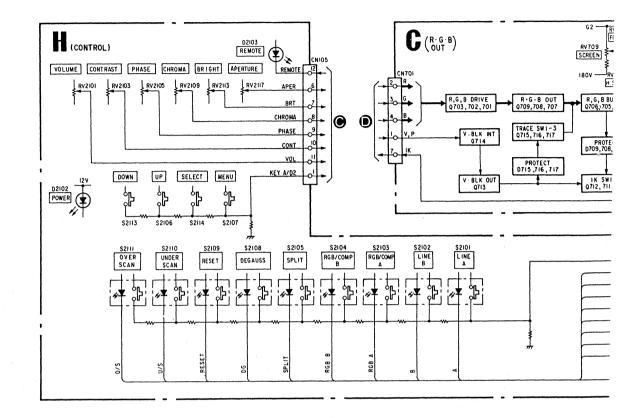


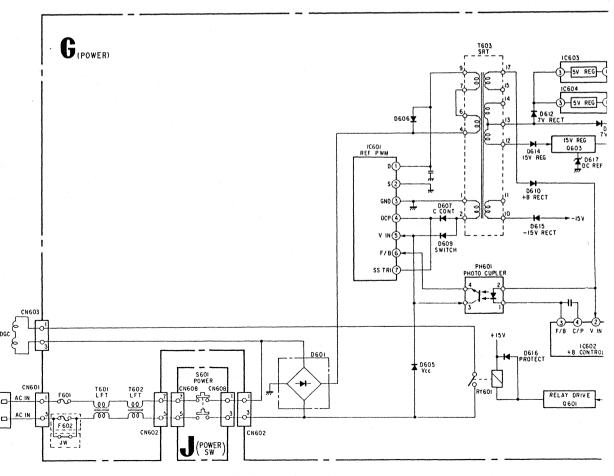


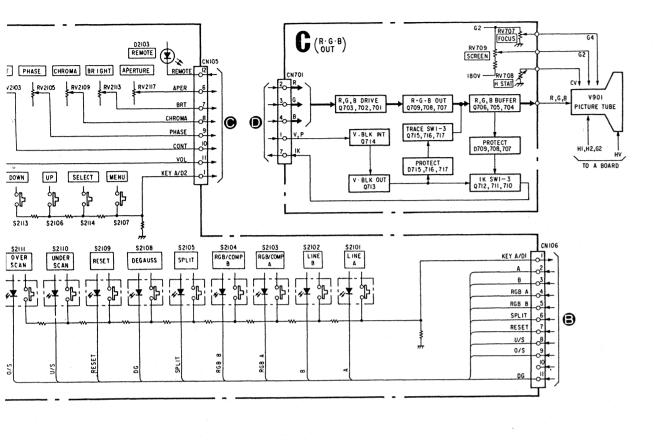
-51-

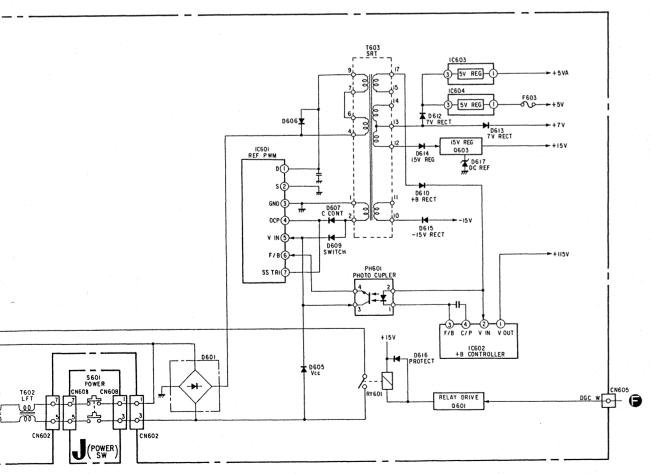
# **BLOCK DIAGRAMS (2)**

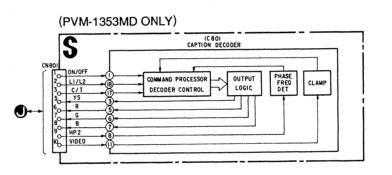


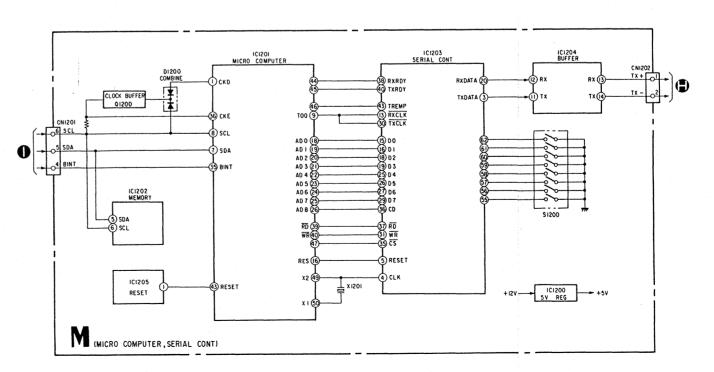


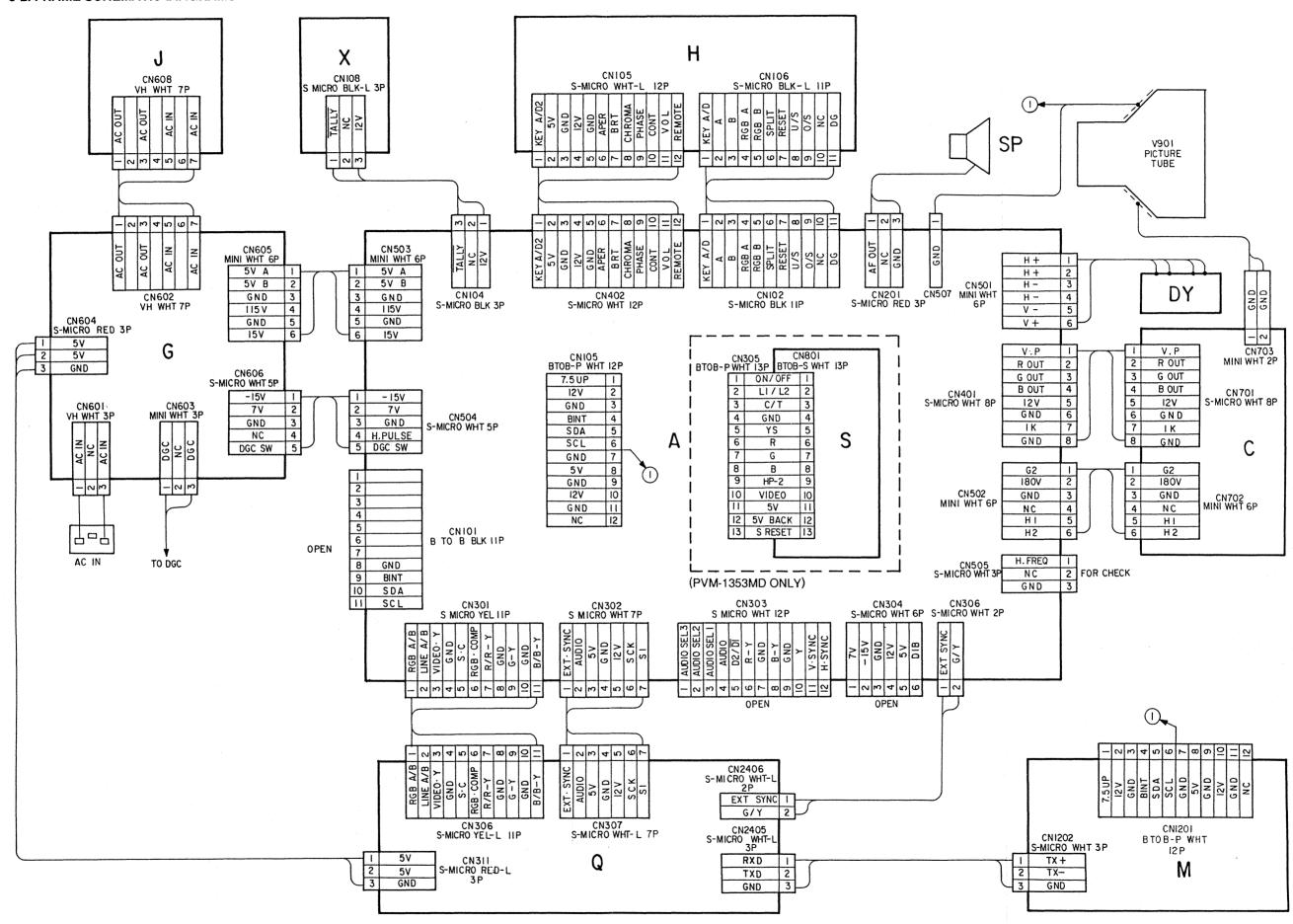




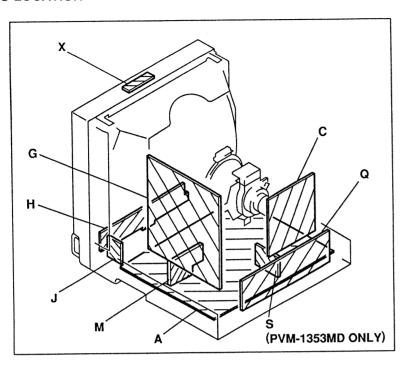








## 6-3. CIRCUIT BOARDS LOCATION



## 6-4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

#### Note:

- All capacitors are in  $\mu F$  unless otherwise noted. pF:  $\mu \mu F$  50WV or less are not indicated except for electrolytics.
- · All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms, 1/4W in resistance, 1/10W in chip resistance.  $k\Omega$ =1000Ω,  $M\Omega$ =1000 $k\Omega$
- : nonflammable resistor.
- : fusible resistor.
- : panel designation and adjustment for repair.
- · All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by M in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
- Should replacement be required, replace only with the value originally used.
- ullet When replacing components identified by  $oldsymbol{\square}$  , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by 📓 and repeat the adjustment until the specified value is achieved. (Refer to R1535, R1536 adjust on Page 36.)
- · When replacing the part in below table, be sure to perform the related

Part replaced ( )	Adjustment (►)
IC500, IC507, Q500, Q501, D501, D533, C506, C512, C513, C523, C549, C592, R506, R508, R515, R516, R517, R518, R519, R551, R1535, R1536, R1537, T501	R1535, R1536 (HOLD-DOWN)

Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

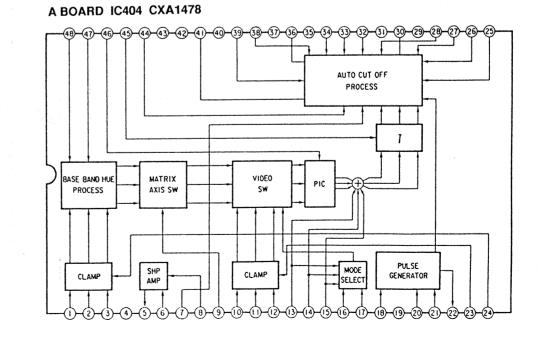
- · All voltage are in V.
- Voltage are dc with respect to ground unless otherwise noted.
- · Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- B + bus.
- · Signal path.
- · No mark : with PAL color-bar signal is received or common voltage.
- For the respective voltage ratings in NTSC 3.58, S-VIDEO and ANALOG RGB modes, see the table.

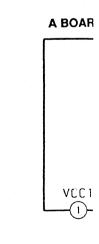
#### Reference information

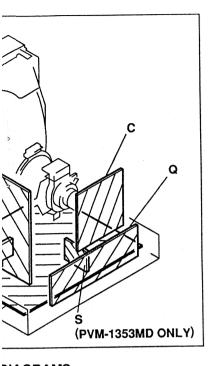
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	:PS	STYROL
	: PP	POLYPROPYLENE
	:PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: Les composants identifiés par une trame et par une marque / sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

#### A BOARD IC305 M51 A BOARD IC101 µPD78013YCW TO 0 / P30 O-16 bit TIMER / EVENT COUNTER PORTO ROGRAM COUNTER TI 0 / INTP 0 / POO O-СОМ SYNC SEP TO 1 / P31 O-S NO TIMER / PORTO 1 TI 1 / P33 O GENERAL RGE. ROM PROGRAM MEMORY BURST GATE DECODE AND CONTROL PULSE TO 2 / P32 O-PORTO 2 ⇒ P20 - P27 ROM DATA MEMORY S bit TIMER / 16384 × 8 **EVENT COUNTER 2 ⇒** P30 - P37 PORTO 3 AMP-2 WATCHDOG TIMER → P40 - P47 PORTO 4 WATCH TIMER AMP - I PORTO 5 P50 - P57 \$10/\$B0/P25 O-SERIAL INTERFACE 0 SO 0 / SB 1 / P26 O-SCK 0 / P27 O-₩ P60 - P67 PORTO 6 SI 1 / P20 O-CLOCK GENERATOR CLOCK OUTPUT CONTROL STAND BY CONTROL BUZZER OUTPUT S0 1 / P21 O-SUB MAIN SCX 17 P22 O-STB / P23 O-BUSY / P24 O-EXTERNAL ACCESS BUZ / P36 PCL / P35 P04/XT1 XT2 X1 X2 -O RD / P64 AV 00 O-A / D CONVERTER O WAIT / P66 AVSS O O ASTB / P67 AV REF O-RESET YOU YSS IC INTP 0 / P00 -INTP 3 / P03







# **DIAGRAMS**

- All voltage are in V.
- · Voltage are dc with respect to ground unless otherwise noted.
- Readings are taken with a color-bar signal input.
- · Voltage variations may be noted due to normal production tolerances.
- B + bus.
- ■ : B bus.
- Signal path.
- No mark : with PAL color-bar signal is received or common voltage.
- For the respective voltage ratings in NTSC 3.58, S-VIDEO and ANALOG RGB modes, see the table.

## Reference information

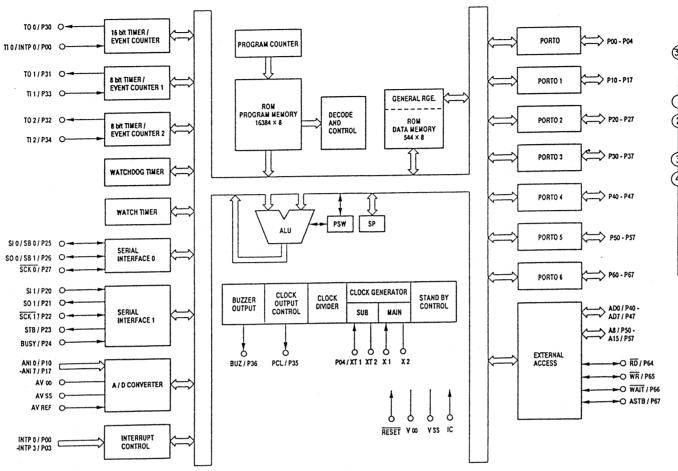
METAL FILM RESISTOR :RN SOLID : RC NONFLAMMABLE CARBON : FPRD NONFLAMMABLE FUSIBLE : FUSE NONFLAMMABLE WIREWOUND :RW :RS NONFLAMMABLE METAL OXIDE NONFLAMMABLE CEMENT : RB MICRO INDUCTOR : LF-8L CAPACITOR :TA **TANTALUM** STYROL : PS :PP POLYPROPYLENE : PT MYLAR METALIZED POLYESTER : MPS METALIZED POLYPROPYLENE : MPP : ALB **BIPOLAR** HIGH TEMPERATURE : ALT

Note: Les composants identifiés par une trame et par une marque A sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

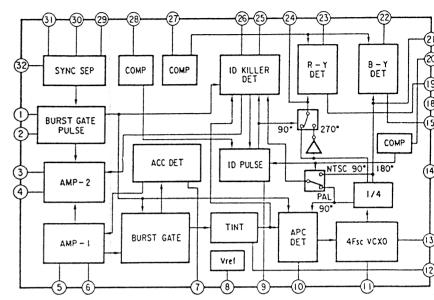
HIGH RIPPLE

: ALR

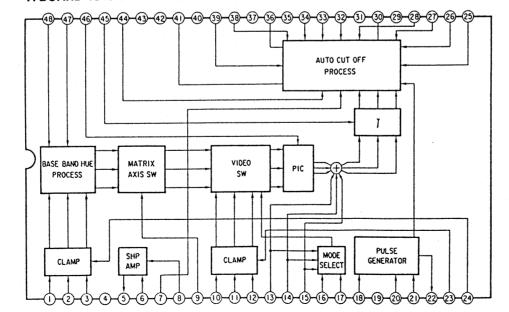
# A BOARD IC101 μPD78013YCW



# A BOARD IC305 M51279FP

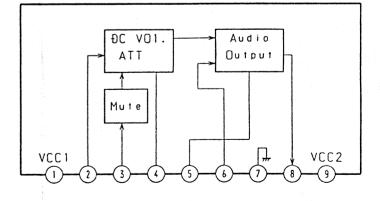


#### A BOARD IC404 CXA1478

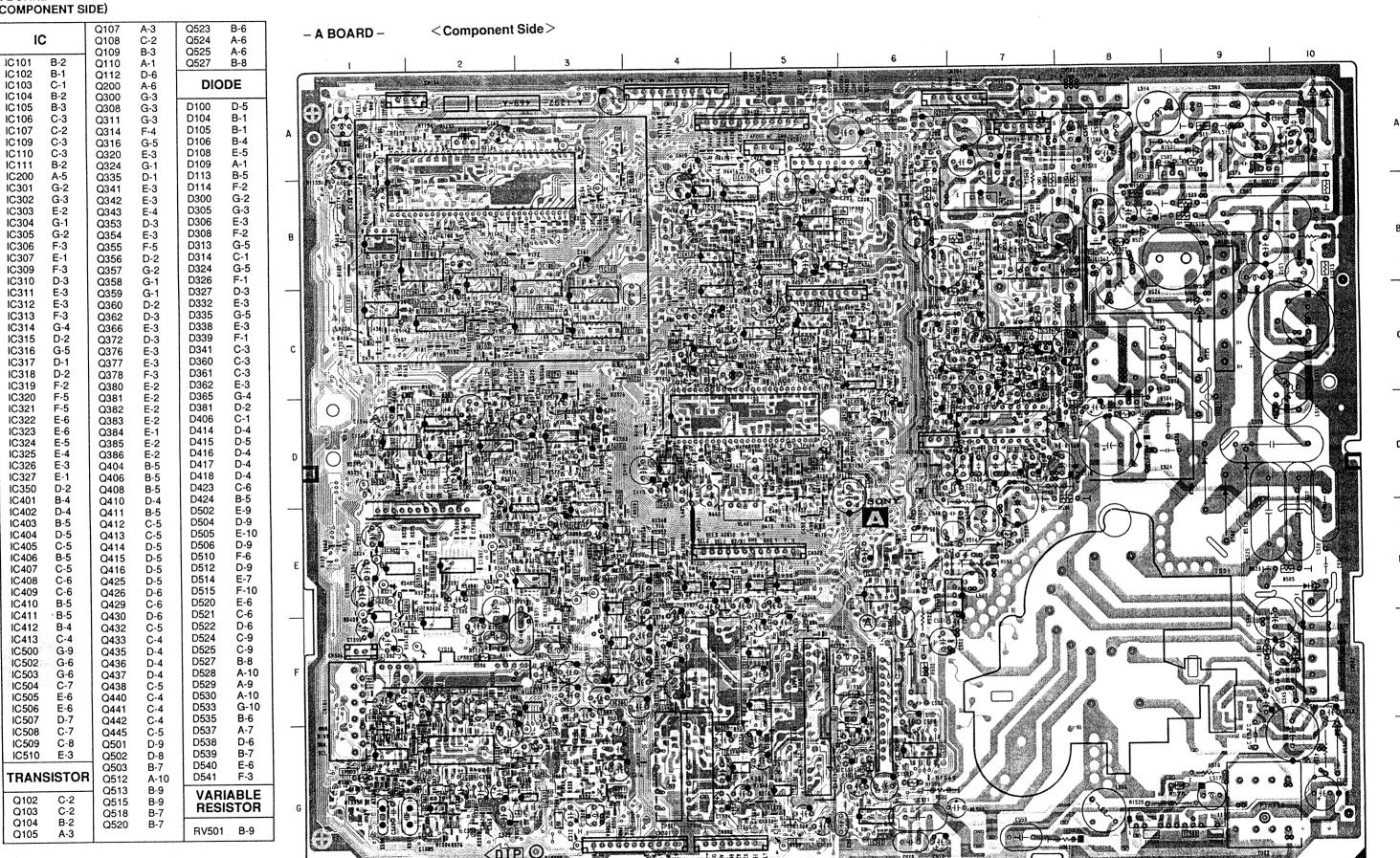


-60-

## A BOARD IC200 AN5265



A BOARD (COMPONENT SIDE)

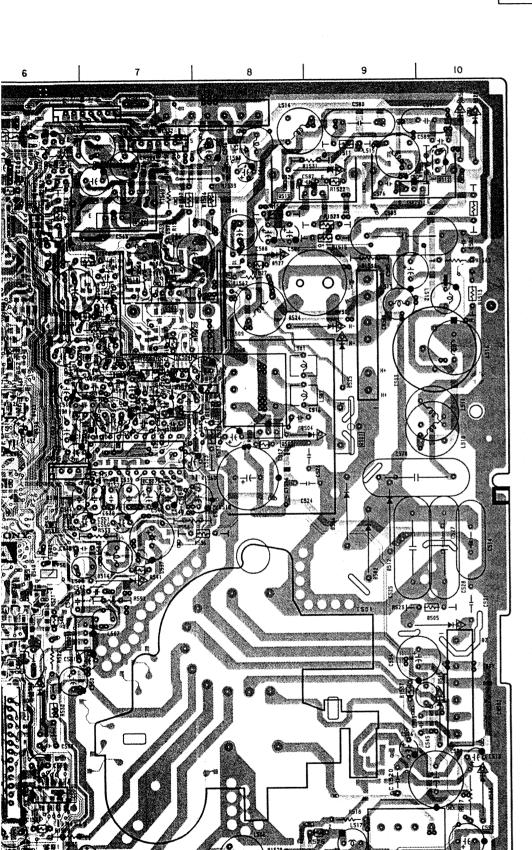


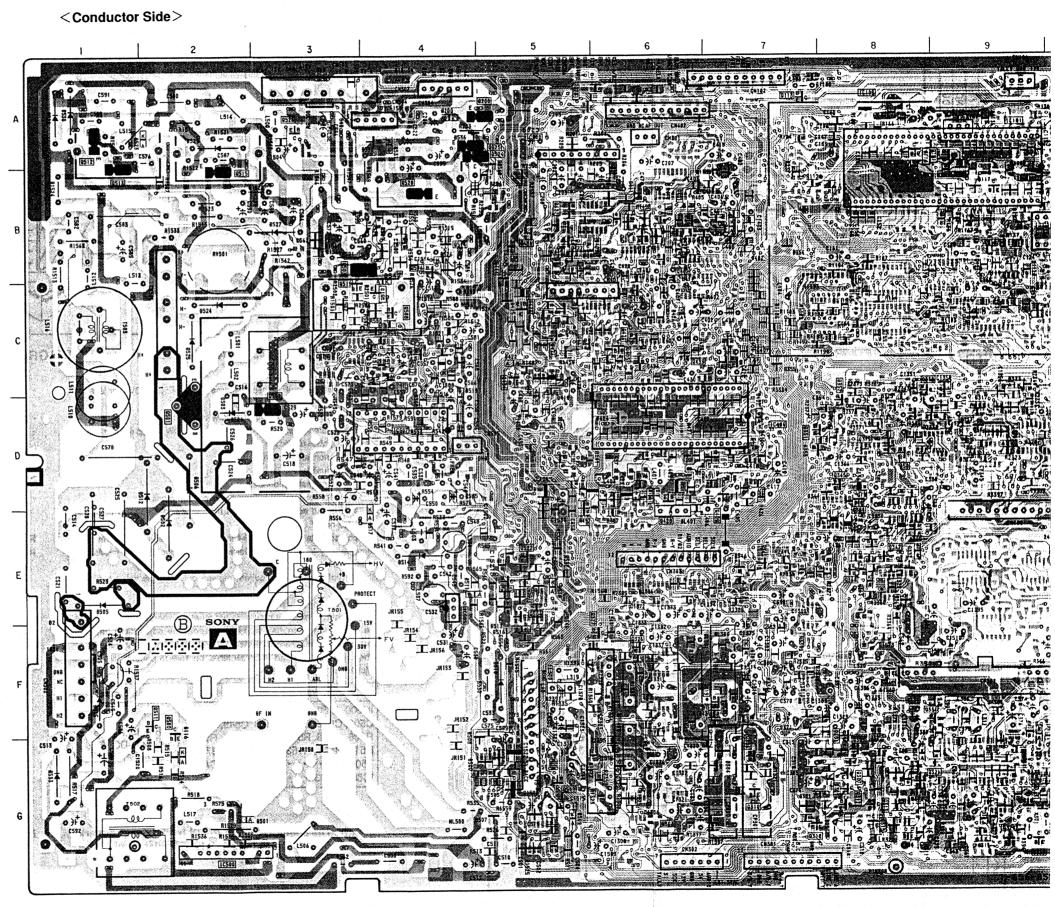
-62-

[MICON, RGB-MATRIX, DAC,

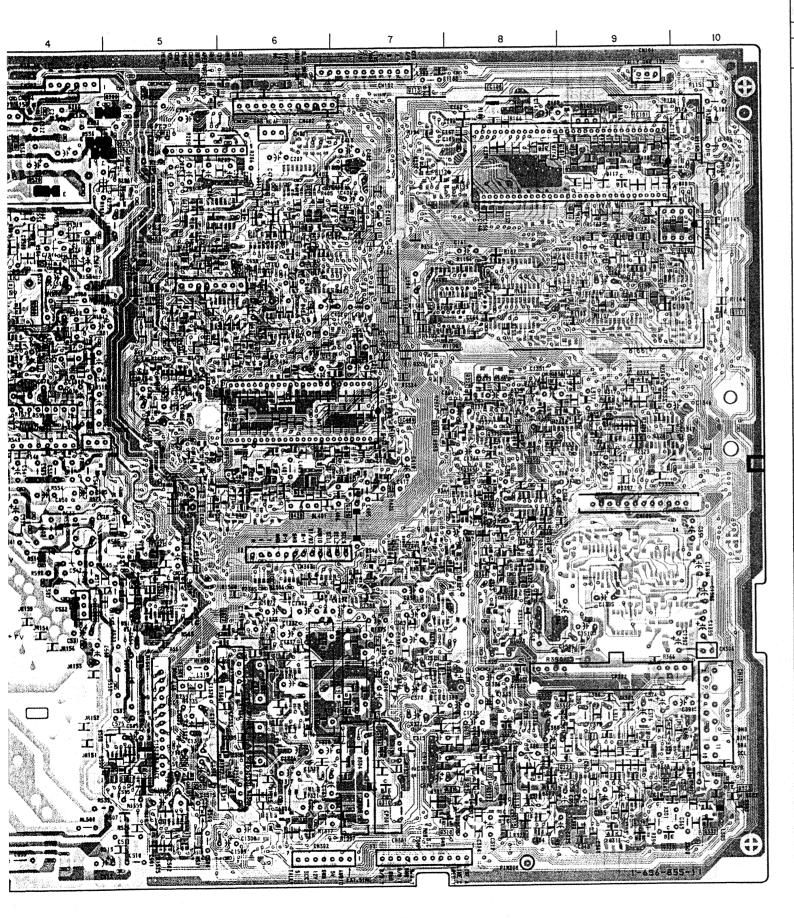
[CHROMA DEMOD, SECAM CHROMA SELECT, SYSTEM SW,] ON SCREEN DISPLAY, ON/OFF MUTE, VOL OFF SW, BLACK-SAMPLING, RGB SW AUDIO SELECT, SECAM DECORDER, HOLD AMP

[H/V OUT, DEFLECTION SYSTEM, AUDIO OUT





H/V OUT, DEFLECTION SYSTEM, AUDIO OUT



# A BOARD

CONDU	CTOR SI	DE)	
10100		Q508 Q509 Q510	C-4 G-5 C-4
TRANS	A-8 SISTOR	Q511 Q514 Q517	F-2 B-4 C-4
Q101 Q111	A-9 C-10	Q519 Q522	C-3 E-5
Q113 Q114	A-7 A-8	Q526 DIC	A-3 DE
Q115 Q201 Q301 Q302 Q303 Q305 Q306 Q307 Q309 Q310 Q312 Q313 Q315 Q318 Q319 Q321 Q322 Q323 Q325 Q326 Q327 Q328 Q329 Q330 Q331 Q332 Q333 Q338 Q339 Q345 Q350 Q351 Q352 Q361 Q363 Q364 Q367 Q368 Q369 Q401 Q402 Q403 Q404 Q409 Q417 Q418 Q419 Q420 Q421 Q422 Q423 Q424 Q428 Q431 Q434 Q434 Q434 Q434 Q434 Q434 Q434	8 A F G G G G G G G G G F G G G F F F G G F F G G D C D D D D C F G D E E E B B B C C D C B C C B B C C D B C C C B F E B E	D101 D102 D103 D107 D111 D115 D116 D200 D301 D302 D303 D304 D307 D319 D310 D311 D315 D317 D320 D322 D323 D325 D333 D337 D344 D345 D346 D347 D363 D346 D347 D363 D364 D401 D404 D405 D407 D408 D401 D404 D405 D407 D408 D410 D411 D421 D422 D425 D426 D427 D500 D501 D503 D507 D508 D509 D513 D516 D517 D518 D509 D513 D516 D517 D518 D519 D523 D526 D531 D532 D534 D536 D5312 D534	B-10 B-99999247977888898999998888877778887655755664422254454244444444444444444444

#### Note:

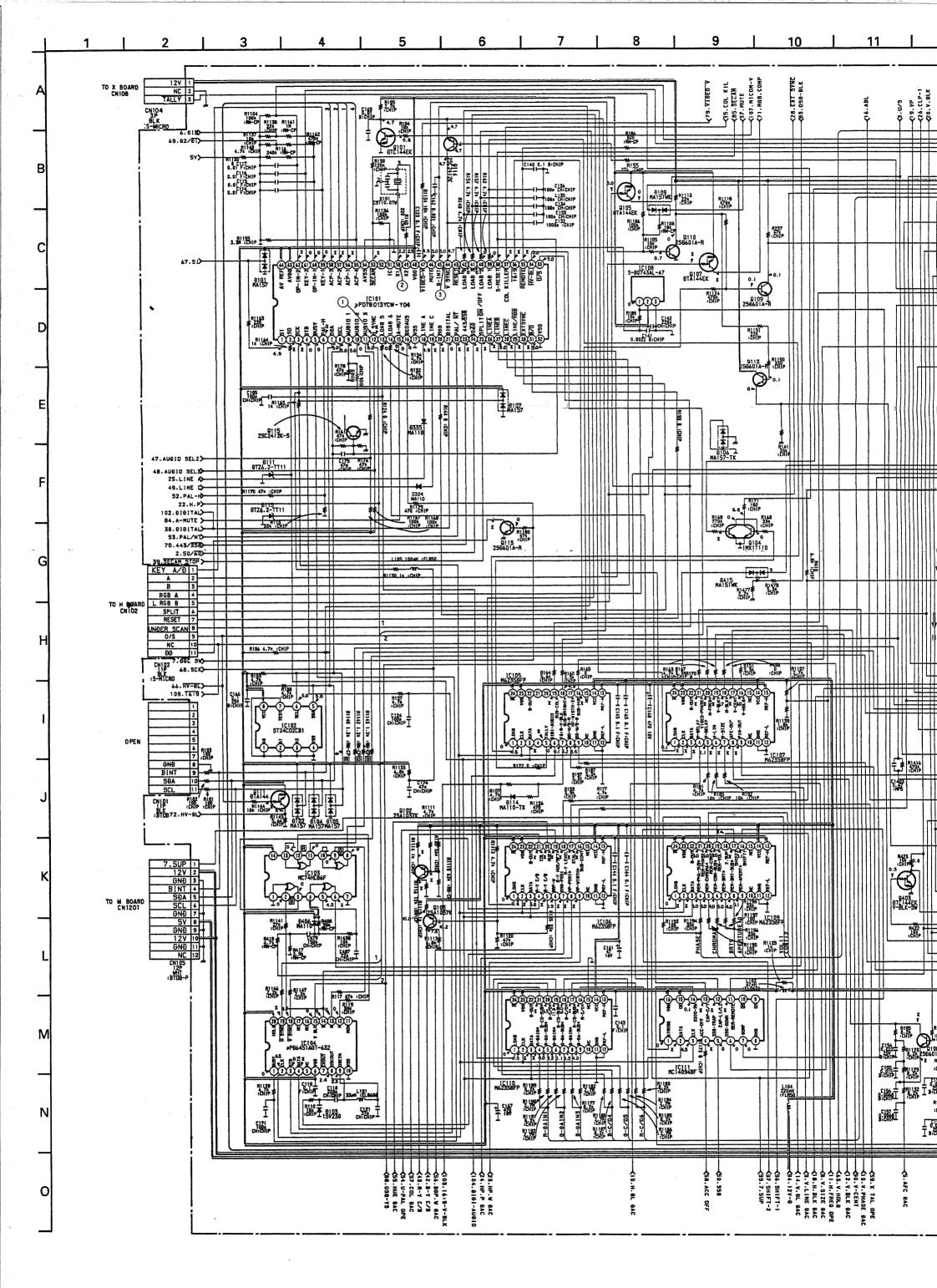
• : Pattern from the side which enables seeing.

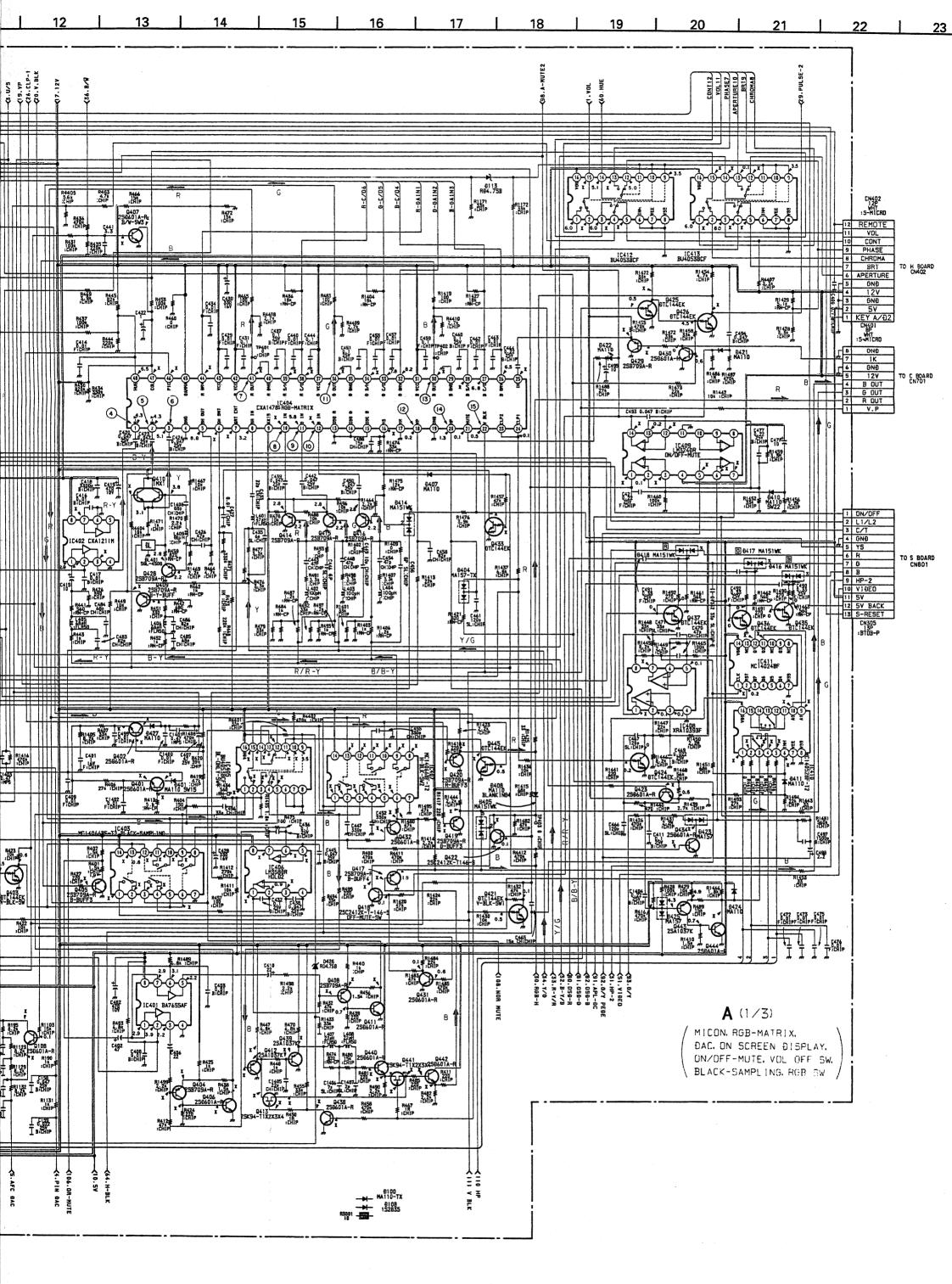
• : Pattern of the rear.

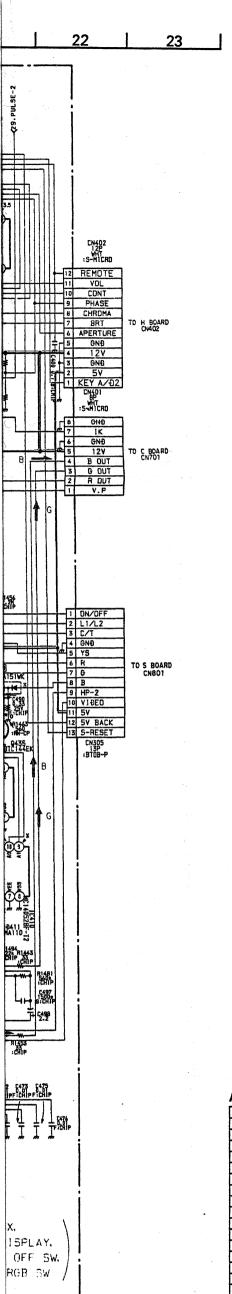


#### NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.







# A (1/3) BOARD WAVEFORMS

A (1/3) BOARD WAVEFORMS				
①	② / /	3		
5.0 Vp-p ( H )	3.7 Vp-p (10MHz)	4.8 Vp-p ( V )		
4 malaglar	4 Halled Haller NISCS_SB	3 Mhy Mhy		
PAL 0.3 Vp-p ( H )	0.25 Vp-p(H) 5-V10E0 0.3 Vp-p(H)	PAL 0.45 Vp-p ( H )		
5 My My	(S) 	© ~~~~		
7553.58 0.35 Vp-p ( H )	5-V10EO 0.4 Vp-p(H)	O.48Vp-p(H)		
©	(a)   (b)   (c)   (c)			
NTSC3.58 1.9 Vp-p ( H )	s-vided 0.57 Vp-p ( H )	PAL 2.4 Vp-p ( H )		
7 	(2) 1	ANALDG ROB 2.9 Vp-p ( H )		
AMALOO RG9 O. 6 Vp-p ( H )	9 ANALOO PROB 0.6 Vp-p ( H )	10 AMALOO ROS 0.6 Vp-p ( H )		
2.3 Vp-p ( H )	1.4 Vp-p ( H )	2.4 Vp-p ( H )		
		G Jum J –		
2.5 Vp-p ( H )	4.6 Vp-p(V)	PAL 2.3 Vp-p ( H )		
(3) [][	(3) 2////////////////////////////////////	13 ANALOG RGB 2.6 Vp-p ( H )		
0, ,	(9			

3.6 Vp-p ( V )

# A (1/3) BOARD \* MARK

~ (1/O)	BOAL	יער	MARK	
	PAL	NTSC 3.58	S-VIDEO	ANALOG RGB
IC101 ②	1.9	1.9	1.9	1.9
3	4.3	4.3	4.3	4.3
<u> </u>	4.1	0	0	0
10	3.6	3.6	3.6	3.6
<u> </u>	0	0	4.7	0
8	0	0	0	4.7
2	4.9	0	0	0
<b>a</b>	4.8	0	0	0
⊗	4.8	0	0	0
8	4.8	4.8	4.7	4.7
<b>38</b>	0.1	0.1	4.9	4.8
<b>3</b>	4.8	4.8	4.8	0.1
- 8	4.8	4.8	4.8	0.1
- 9	4.8	4.8	4.8	0
<b>3</b> 3	0.7	3.4	3.4	3.4
9	0.7	0.6	0.8	0.9
89	4.2	4.3	4.3	4.3
89	0	0	0	0
8	0	0	0	ō
9	. 0	ō	0	0
<b>S</b>	0	0	0	0
€	0	0	0	0
IC103 (6)	0.2	0.2	0	0
IC104 ①	2.3	2.2	2.0	2.3
10.10	3.5	3.5	3.1	3.5
IC105 ③	2.3	2.2	0	2.3
<u> </u>	0	0.1	11.8	0
- (6) (19)	2.6 5.4	5.4	2.8 6.6	2.6 8.1
IC106 ③	2.3	2.2	2.1	2.3
(B)	5.4	5.4	4.1	5.4
Õ	2.4	2.4	0.6	2.4
0	7.8	7.8	5.5	7.8
0	5.1	5.1	4.0	5.1
	0.1	10.5	10.9	10.5
	3.1	2.6	2.7	2.5
<u> </u>	2.4	2.1	2.1	3.2
<b>®</b>	6.3 3.6	4.8	10.7	9.5
<b>3</b>	0.8	0.4	2.4	3.1
IC107 ②	4.6	4.5	4.4	4.5
3	2.3	2.2	2.1	0
0	2.8	2.8	3.3	2.8
<u> </u>	1.5	1.4	2.3	1.4
<u>0</u>	2.9	2.9	2.1	2.9
<u> </u>	2.6	2.6	2.9	2.6
<u> </u>	2.6	2.8	2.8	2.8
<b>®</b>	3.2	5.4	5.3	5.4
89	4.5	5.0	3.7	5.0
<b>a</b>	6.3	6.1	6.0	6.1
IC109 ②	4.6	4.5	4.4	4.4
3	2.3	2.2	2.1.	2.3
<u>®</u>	11.9	11.9	11.9	0.1
10110 (8)	11.9	0.1	0.1	11.8
IC110 ③		2.2	2.0	2.2
<b>⊕</b>	7.2 5.8	7.2 5.8	8.3 6.2	7.2 5.8
0	11.9	11.9	7.8	11.9
89	0	7.9	7.8	7.9
IC111 ②	2.3	2.2	2.0	2.2
•	0.3	0.3	0	0.3
0	0.2	0.1	0.1	0.1
⊕	0	5.0	0	5.0
<u> </u>	5.0	5.0	0	5.0
IC402 @	3.1	2.9	3.0	3.6
<u> </u>	0	2.3	2.2	2.2
① IC403 ①	2.9	2.9	2.9	2.9
1C4U3 (1)	0.8 1.2	0.8	1.2	0.9
3	1.4	0.9	1.3	0.9
0	0.8	0.9	0.8	1.4
Ğ	0.6	0.6	0	0.6
•	0.5	0.6	0.6	0
•	1.0	1.0	0.8	1.1
0	1.6	1.1	1.4	1.6
			. 10	1.5
89	0.9	1.0	0.8	1.1

	· r	NTSC		ANALOGI	
	PAL	3.58	S-VIDEO	ANALOG RGB	PA PA
IC404 (§	3.0	3.0	4.5	0	Q401 B 1.
⑦ ⑩	4.9	4.9	4.7	6.1	C 7.
(B)	5.6 5.6	5.6 5.6	5.6 5.6	5.8 5.8	Q402 B 0.
(6)	0	0	0	4.4	C 9.
8	3.8	4.1	4.0	3.6	E 1.
<b>9</b>	7.1	8.0	7.7	7.9	Q404 B 5.
<b>8</b> 9	7.0	1.2 8.1	1.2 7.8	7.8	Q405 B 1.
8	1.4	1.2	1.2	1.5	Q406 B 0.
<b>③</b>	7.8	7.7	8.0	7.7	C 1.
<u>®</u>	6.9	7.8	7.6	7.6	Q407 B 0
<b>⊕</b>	1.2 7.2	7.2	1.2 8.3	1.3	C 6.1 Q408 B 5.
<b>8</b>	7.2	7.2	6.9	7.2	Q408 B 5.
@	6.6	6.6	5.5	0	Q409 B 1.
IC405 ①	1.6	1.1	1.4	1.6	E 2.1
<u> </u>	1.4	0.9	1.2	1.5	Q411 C 1.
0	1.4	1.0	1.2	1.4	E 2.
<u> </u>	1.3	1.0	1.2	1.4	Q413 G 2.
0	0.5	0.6	0.3	0.2	D 2.
0	0.5	0.6	0.3	0.2	S 2.
(B)	1.2	0.8	1.2	1.3	Q417 B 1. Q418 C 2.
€	1.2	0.9	1.2	1.3	Q419 B 1.
(9)	1.4	1,0	1.2	1.5	E 2.0
IC406 ①	4.8	4.8	4.8	5.1	Q420 B 1.
<u>3</u>	0.8 1.0	0.9 1.0	0.8	1.0	Q422 C 2.
0	1.0	1.1	0.8	1.1	Q423 B 0.
0	5.1	4.9	4.9	5.1	Q425 C 4.
IC407 ①	1.2	0.9	1.2	1.3	Q426 C 0.
3	0.4 1.4	0.5 1.0	0.4 1.2	0.5 1.4	Q429 B 0. E 0
ő	0.6	0.7	0.5	0.7	Q432 B = 0
3	2.0	2.0	2.0	2.0	C 11
0	11.7	11.6	11.7	11.2	O433 B 0
0	5.5 5.5	5.5 5.5	5.4 5.4	8.5 8.4	C 3.0 Q434 B = 0
<b>69</b>	1.4	1.0	1.2	1.5	C 3.
69	0.6	0.7	0.5	0.6	Q438 B - 0
(9)	2.0	2.0	2.0	2.0	C 11
IC408 ①	2.0 3.1	2.0	3.7	2.0 3.4	Q439 B 2. E 2.
Ō	4.1	3.9	4.2	4.1	Q440 B 2.
IC409 ①	0	9.0	0	7.5	Q441 G - 1
<u>3</u>	5.9	0.4	0.3 5.9	1.6	D 2.
8	5.9	6.3 6.3	5.9	5.9 5.9	S 2. Q442 B 1.
Ō	5.9	6.3	5.9	5.9	E 0.
100	0.1	0.5	0.1	0	Q444 C 1.
10410 (0)	0	6.6 4.0	0	10.7	Q445 C 0.
IC410 ①	3.8	2.4	0	3.9 4.0	
3	1.3	1.4	2.3	1.5	
•	3.5	3.0	3.9	3.9	
<u>®</u>	0.6	1.1	3.1	1.7	
0	4.0	4.0 1.9	2.5	1.4	
1	2.0	2.3	1.8	3.0	
IC411 ①	4.1	3.9	4.2	4.1	
0	1.8	1.9	2.5	1.3	
IC412 ②	0.4	0.4	1.8 5.9	3.0 0.6	
0		8.9	8.9	8.3	
0	9.0	9.0	8.9	8.3	
9	6.0	6.0	6.0	0	
1C413 ②	7.9	8.0	5.9	0.5 6.9	
0	0	5.5	5.4	0.5	
(6)	5.5	5.5	5.4	8.6	
1	3.1	3.1	0	5.1	
(B)		3.1 8.0	6.0	5.1 6.9	
Q102 B		10.9	10.7	10.9	
С		8.1	0	8.1	
O104-1 B		11.5	11.3	11.5	1
Q104 · 1 B		- 0.2 5.0	5.0	-0.2 0.1	1
C		0	0	5.0	i
Q108 C	2.6	2.6	2.9	2.6	]
CITTE		2.6	2.9	2.6	1
Q111 B		0	0.4	0.4	1
Q113 C		4.2	3.8	4.0	1
	711		1		•

# A (1/3) BOARD

3.5 Vp-p ( H )

C101	MICON	Q110	MUTE BUFFER	Q430	IK BLK	D404	sw
C102	ECPROM	Q111	HV DC SW	Q431	RESET MUTE SW	D405	BLANKING
C103	EX-OR	Q112	MUTE BUFFER	Q432	BRIGHT MUTE SW	D406	SW SLICE
C104	ON SCREEN DISPLAY	Q113	DGC SW	Q433	RGB SW	D407	RGB SW
C105	DAC 1	Q114	V SYNC AMP	Q434	MUTE RGB SW	D408	BLANKING
C106	DAC 2	Q115	MIS ACTION PROTECT	Q435	OSD DOWN SW	D410	SW
C107	DAC 4	Q401	BRIGHT ABL	Q436	OSD DOWN SW	D411	SW
C108	MICON RESET	Q402	PIY ABL	Q437	OSD DOWN SW	D414	OSD MODE SW
C109	DAC 5	Q403	V-BLK-SW	Q438	BLUE ONLY SW	D415	OSD BLK-INSERT
C110	DAC 3	Q404	B/O G AMP 9	Q439	BCH B/O DLY-EQ 1	D416	OSD B MIX
C111	EXP-OUT-PORI	Q405	B-BUFF 3	Q440	BCH B/O DLY-EQ 2	D417	OSD G MIX
C401	BLUE-ONLY GAIN-CONT AMP	Q406	B/O G AMP 2	Q441	BCH B/O SW	D418	OSD R MIX
C402	R-Y GAIN-CONT AMP	Q407	B/W-SW3	Q442	BCH BUFFER	D421	SW
C403	BLACK-SAMPLING	Q408	B/O R AMP 1	Q443	AUTO CMROMA SET UP AMP 1	D422	SW
C404	RGB-MATRIX	Q409	B-Y-BUFF	Q444	AUTO CMROMA SET UP AMP 2	D423	CLAMP
C405	BL-ONLY-SW 1	Q410	Y BUFFER	Q445	BLUE ONLY SW	D424	PROTECT
C406	HOLD 2	Q411	B/O R AMP 2		, to the second	D425	CLAMP
C407	H-BLK-SW 2	Q412	BCH BUFFER			D426	D. C. SHIFT
C408	EDGE DETECT	Q413	BCH NORMAL SW	D100	Jr	D427	PROTECT
C409	ON/OFF-MUTE	Q414	R BUFFER	D101	PROTECT		
C410	SIG SELECT	Q415	G BUFFER	D102	PROTECT	1	
C411	COUNTER	Q416	B BUFFER	D103	OSP POSITION ADJ	1	
C412	VOL OFF SW 4	Q417	B-BUFF	D104	PROTECT	1	
C413	VOL OFF SW 2	Q418	OFF-MUTE-SW	D105	PROTECT	1	
		Q419	G-BUFF 3	D106		1	
		Q420	R-BUFF-3	D107	PROTECT	1	
Q101	V-BLK BUFFER	Q421	V-BLK-SW 1	D108		1	
Q102	R-Y C/B BUFFER	Q422	BLANKING	D109	MUTE		
Q103	B-Y C/B BUFFER	Q423	BLUE BUFFER	D111	PROTECT	1	
Q104	TALLY SW	Q424	BLK	D113	D. C. SHIFT	1	
Q105	U/C SW	Q425	V-P BUFFER 1	D114	SW	1	
Q107	RGB COMP	Q426	V-P BUFFER 2	D115	PROTECT	1	
Q108	V SHORT SW	Q428	SHARPNESS BUFFER	D335	SW	1	
Q109	RESET	Q429	IK BUFFER	D401	SW 15	1	

Schematic diagram

# WAVEFORMS

VAVEFUNIVIO	
3.7 Vp-p (10MHz)	3 4.8 Vp-p ( V )
4 MISCS.58 0.25 Vp-p(H) 5-vipeo 0.3 Vp-p(H)	© May May 1
5 	6 0.48 Vp-p(H)
δ-v10E0 0.57 Vp-p ( H )	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
(2) 	(AMALDO ROB 2.9 Vp-p ( H )
9 ANALOO RGB 0.6 Vp-p ( H )	10 AMALOO ROB 0.6 Vp-p ( H )
(1)	1) 
(2) 4.6 Vp-p ( V )	PAL 2.3 Vp-p ( H )
(3) 2-1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/	13
3.6 Vp-p(V)	

# A (1/3) BOARD \* MARK

A	(1/3)	BOARD *		MARK		
		PAL	NTSC 3.58	S-VIDEO	ANALOG RGB	
ic	101 ②	1.9	1.9	1.9	1.9	
	3	4.3	4.3	4.3	4.3	
	0	4.1	0	0	0	
	1	3.6	3.6	3.6	3.6	
	19	0	0	4.7	0	
	<b>29</b>	0	0	0	4.7	
	@	4.9	0	0	0	
	<u> </u>	4.8	0	0	0	
		4.8	0	0	0	
_		4.8	4.8	4.7	4.7	
	- 8	0.1	0.1	4.9	4.8	
_	<b>29</b>	4.8	4.8 4.8	4.8	0.1	
	9	4.8	4.8	4.8	0.1	
	8	3.4	3.4	3.4	3.4	
	<b>S</b>	0.7	0,6	0.8	0.9	
	Ø	0	0	0	0	
	8	4.2	4.3	4.3	4.3	
	€9	0	0	0	0	
	€ 6	0	0	0	0	
	<b>9</b>	0	0	0	0	
_	<u>8</u>	00	0	0	0	
_	89	0	0	0	0	
-	103 @	0.2	0.2	0	0	
LIC	104 🕚	2.3	2.2	2.0	2.3	
<u> </u>	(105.00	3.5	3.5	3.1	3.5	
	105 ③	2.3	2.2	110	2.3	
-	<u></u>	2.6	2.7	11.8	2.6	
-	<b>19</b>	5.4	5.4		8.1	
10	106 ③	2.3	2.2	2.1	2.3	
۳	(§	5.4	5.4	4.1	5.4	
<del> </del>	0	2.4	2.4	0.6	2.4	
_	Ō	7.8	7.8	5.5	7.8	
Г	0	5.1	5.1	4.0	5.1	
	•	0.1	10.5	10.9	10.5	
	•	3.1	2.6	2.7	2.5	
L	<b>(9</b> )	2.4	2.1	2.1	3.2	
L		6.3	11.9	10.7	3.7	
L	<u> </u>	3.6	4.8	4.3	9.5	
<del>  ,</del>	207 (8)	0.8	0.4	2.4	3.1	
۳	3 3	4.6 2.3	2.2	2.1	0	
H	<u> </u>	2.8	2.8	3.3	2.8	
1	<u> </u>	1.5	1.4	2.3	1.4	
一	<u> </u>	2.9	2.9	2.1	2.9	
Г	0	2.6	2.6	2.9	2.6	
	•	2.9	2.9	2.6	2.9	
	•	2.6	2.8	2.8	2.8	
L	<b>®</b>	3.2	5.4	5.3	5.4	
L	<b>3</b>	4.5	5.0	3.7	5.0	
L	<u> 80</u>	6.3	6.1	6.0	6.1	
۲	C109 @		4.5	4.4	4.4	
-	<u> </u>	2.3	2.2	2.1.	2.3	
-		11.9	0.1	0.1	11.8	
1	C110 ③	2.3	2.2	2.0	2.2	
۳	<u> </u>	7.2	7.2	8.3	7.2	
r	€	5.8	5.8	6.2	5.8	
	•	11.9	11.9	7.8	11.9	
	<b>3</b>	0	7.9	7.8	7.9	
U	C111 @	2.3	2.2	2.0	2.2	
L	0	0.3	0.3	0	0.3	
L	0		0.1	0.1	0.1	
L			5.0	0	5.0	
H	<u> </u>		5.0	0	5.0	
۳	C402 @	3.1	2.9	3.0	3.6	
-	<u> </u>	<del></del>	2.3	2.2	2.2	
-	C403 (i)		2.9	2.9	2.9	
۲	C493 ① ②		0.8	1.2	0.9	
H	<u> </u>		0.8	1.3	0.9	
H	<u> </u>		0.9	0.8	1.4	
1	<u> </u>		0.6	0.5	0.6	
	<u> </u>	0.5	0.6	0.6	0.0	
T	0		1.0	0.8	1.1	
Г	Õ	1	1.1	1.4	1.6	
	100	<del></del>	1.0	1.2	1.5	
		<del></del>				
E	0		1.0	0.8	0.6	

	$\neg \neg$		NTSC	014050	ANALOG
1	- 1	PAL	3,58	S-VIDEO	RGB
IC40	4.6	3.0	3.0	4.5	0
10.10	<u></u>	4.9	4.9	4.7	6.1
-	<u>@</u>	5.6	5.6	5.6	5.8
<u> </u>	<u>@</u>	5.6	5.6	5.6	5.8
	<u>@</u>	0	0	0	4.4
<u></u>	8	3.8	4.1	4.0	3.6
L	<b>8</b>	7.1	8.0	7.7	7.9
L	∞	1.4	1.2	1.2	1.4
	9	7.0	8.1	7.8	7.8
	8	1.4	1.2	1.2	1.5
<b> </b>	9	7.8	7.7	8.0	7.7
-	<u> </u>	6.9	7.8	7.6	7.6
-	•	1.2	1.0	1.2	1.3
	<u>@</u>	7.2	7.2	8.3	7.2
	€	7.2	7.2	6.9	7.0
	<b>@</b>	6.6	6.6	5.5	0
IC40	5 (D)	1.6	1.1	1.4	1.6
	@	1.4	0.9	1.2	1.5
-		1.2			
-	<u> </u>		0.9	1.1	1.2
<u></u>	<b>(1)</b>	1.4	1.0	1.2	1.4
L	<u> </u>	1.3	1.0	1.2	1.4
	100	0.5	0.6	0.3	0.2
	1	0.5	0.6	0.3	0.2
	@	1.2	0.8	1.2	1.3
1	<u>(3)</u>	1.4	0.9		
				1.3	1.4
-	<u> </u>	1.2	0.8	1.2	1.3
	<u>(B)</u>	1.4	1.0	1.2	1.5
IC40	<b>6</b> ①	4.8	4.8	4.8	5.1
	3	0.8	0.9	0.8	1.0
	<u>©</u>	1.0	1.0	0.8	1.1
	<u></u>	1.0	1.1	0.8	1.1
-	ভ	5.1	4.9	4.9	5.1
100	70	1.2	0.9	1.2	1.3
1040					<del></del>
	<u> </u>	0.4	0.5	0.4	0.5
	<u> </u>	1.4	1.0	1.2	1.4
L	0	0.6	0.7	0.5	0.7
	<b>③</b>	2.0	2.0	2.0	2.0
		. 11.7	11.6	11.7	11.2
	•	5.5	5.5	5.4	8.5
	Õ	5.5	5.5	5.4	8.4
	8	1.4	1.0	1.2	1.5
-					
	<u>_0</u>	0.6	0.7	0.5	0.6
<u> </u>	<u>@</u>	2.0	2.0	2.0	2.0
L	<b>(9</b> )	2.0	2.0	2.0	2.0
IC40	D8 ①	3.1	2.9	3.7	3.4
L	<b>O</b>	4.1	3.9	4.2	4.1
IC40	9 ①	0	9.0	0	7.5
	3	0	0.4	0.3	1.6
_	<u>6</u>	5.9	6.3	5.9	5.9
-	_		6.3		
		5.9		5.9	5.9
	<u>_0</u>	5.9	6.3	5.9	5.9
	<u>@</u>	0.1	0.5	0.1	0
	<u> </u>	0	6.6	0	10.7
IC4	10 ①	3.8	4.0	0	3.9
Γ	@	3.0	2.4	0	4.0
	<u> </u>	1.3	1.4	2.3	1.5
-	<u> </u>				
-		3.5	3.0	3.9	3.9
-	<u>®</u>	0.6	1.1	3.1	1.7
-	<u> </u>	4.0	4.0	1 0	1 0
<u></u>		0	1.9	2.5	1.4
_	<u> </u>	2.0	2.3	1.8	3.0
IC4	11 ①	4.1	3.9	4.2	4.1
	1	1.8	1.9	2.5	1.3
	<b>®</b>	2.0	2.3	1.8	3.0
ICA	12 ②	0.4	0.4	5.9	0.6
1.54	• <u>•</u>	8.9	8.9	8.9	8.3
-			1		
-	<u></u>	9.0	9.0	8.9	8.3
	<u> </u>	6.0	6.0	6.0	0
	<u> (6</u>	0.4	0.4	5.9	0.5
IC4	13 ②	7.9	8.0	0	6.9
	<b>③</b>	0	5.5	5.4	0
	<b>③</b>	5.5	5.5	5.4	8.6
	<u> </u>	3.1	3.1	0	5.1
-		3.1	3.1	6.0	5.1
-	<u>(49</u>				
<u> </u>	(§)	7.9	8.0	6.3	6.9
10	102 B	10.9	10.9	10.7	10.9
ļ	<u>c</u>	8.1	8.1	1 0	8.1
L	E	11.5	11.5	11.3	11.5
Q10	4·1 B	-0.2	-0.2	0	-0.2
	107 B	<del></del>	5.0	5.0	0.1
	C	0	0	0	5.0
1-	108 C	<del></del>			2.6
டுப	1000	2.6	2.6	2.9	1 4.0

E 2.6 2.6 2.9 2.6

Q111 B 5.0 0 4.9 4.9

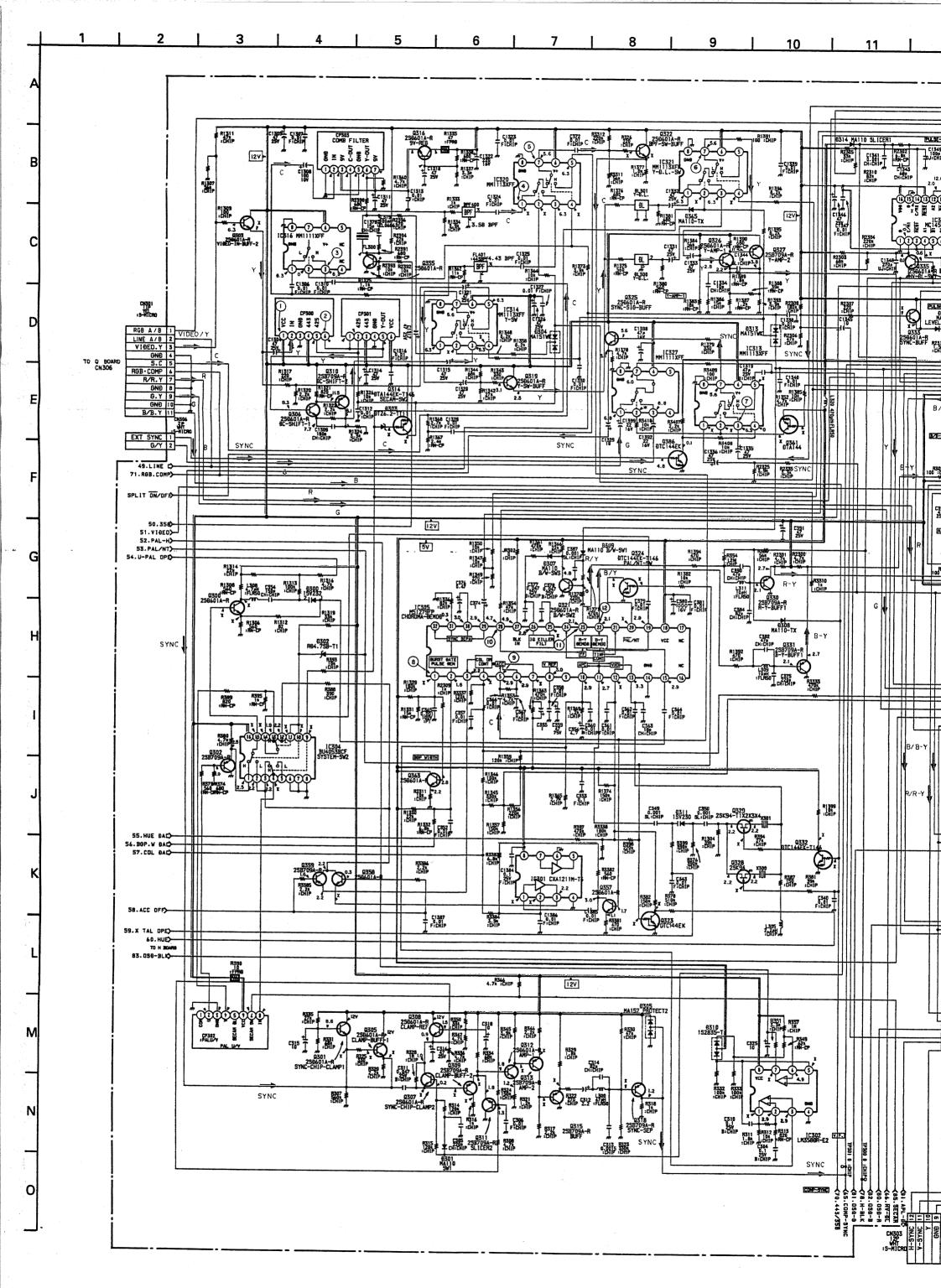
C 0.4 0 0.4 0.4

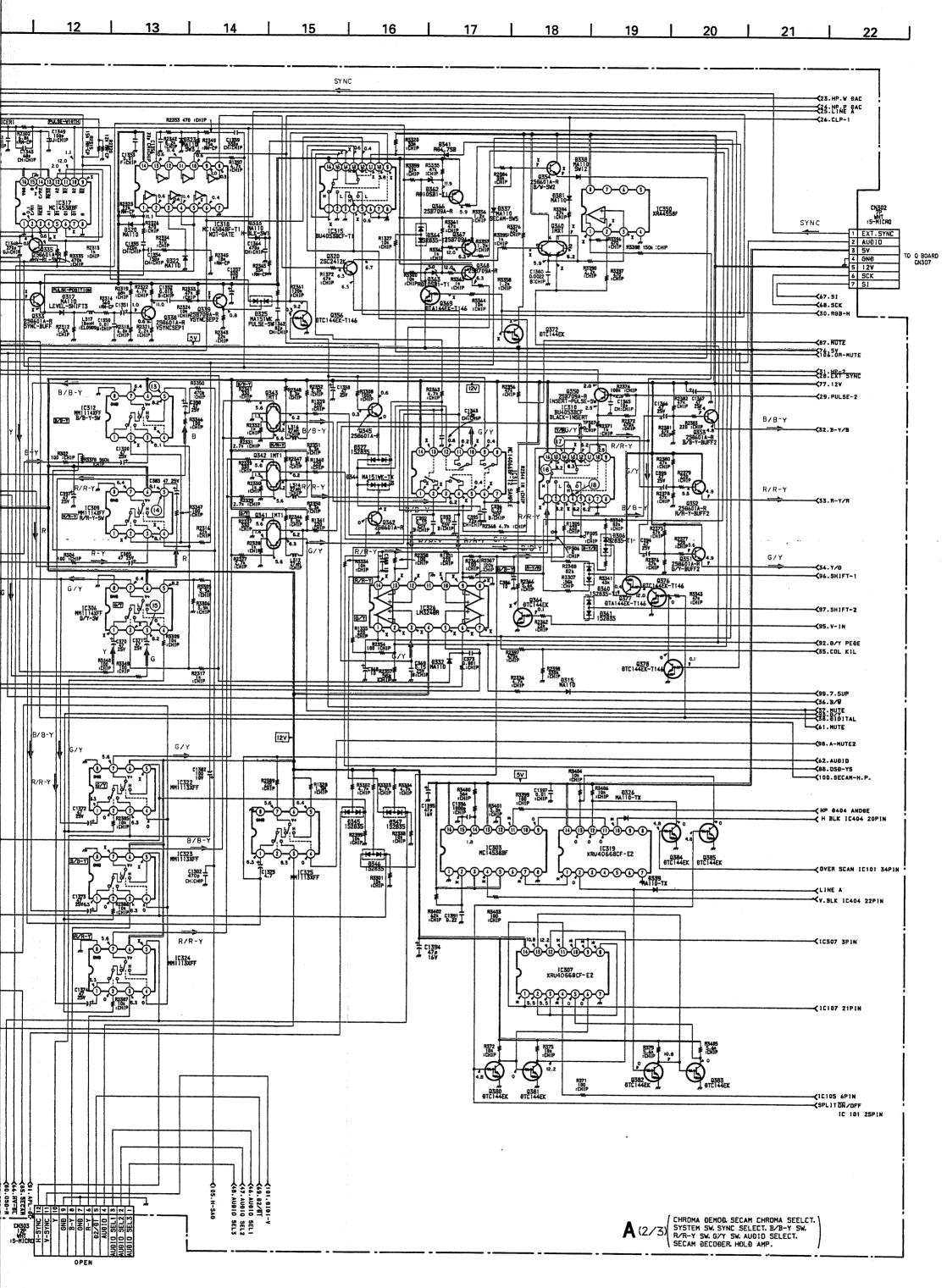
Q113 C 4.1 4.2 3.8 4.0

1	PAL	NTSC 3.58	S-VIDEO	ANALOG RGB
Q401 B	1.1	1.5	1.2	1.0
C	7.5	6.0	8.4	10.0
E	1.4	3.2	3.1	1.0
Q402 B	0.5	0.5	2.4	0.5
C	9.5	8.1	10.4	6.9
E	1.4	3.2	3.2	1.0
Q404 B	5.3	4.9	5.3	5.2
E	6.1	6.0	6.1	6.2
Q405 B	1.3	1.2	1.2	1.4
Q406 B	0.7	0	0.7	0.7
C	1.6	1.0	1.4	1.6
Q407 B			0	
	0	0	5.4	0.6
C	6.6	6.6		
Q408 B	5.3	4.9	5.2	5.2
E .	6.0	5.9	6.0	6.1
Q409 B	1.9	1.6	1.7	1.6
E	2.0	2.2	2.3	2.2
Q411 C	1.4	0.9	1.3	1.4
Q412 B	1.3	1.0	1.1	1.4
E	2.0	1.7	1.8	2.0
Q413 G	2.0	1.6	1.8	-2.1
D	2.0	- 4.3	2.2	2.0
S	2.0	1.7	1.8	2.0
Q417 B	1.4	1.2	1.2	1.4
Q418 C	2.1	1.7	1.7	2.0
Q419 B	1.4	1.2	1.2	1.5
E	2.0	1.7	1.8	2.0
Q420 B	1.2	1.0	1.2	1.3
E	1.8	1.6	1.8	1.9
Q422 C	2.1	1.7	1.8	2.0
Q423 B	0.5	0.4	0.4	0.2
Q425 C	4.5	4.5	4.7	4.5
Q426 C	0.8	0.7	0.7	0
Q429 B	0.1	0.4	0.1	0.1
E	0	- 1.2	0.4	0.4
Q432 B	- 0.3	- 3.4	-0.1	- 3.9
C	11.9	11.8	120	11.6
O433 B	0	0	0	2.7
C	3.0	3.0	4.5	0
Q434 B	-0.1	0	-0.1	0.4
C	3.6	4.5	2.9	0
Q438 B	-0.4	-3.1	0	-2.4
C	11.7	11.7	11.6	11.7
Q439 B	2.0	1.8	1.8	2.0
C440 B	2.6	2.4	0	2.6
Q440 B	2.6	2.5	2.4	-0.7
Q441 G	-1.1	1.7	0	
D	2.0	-8.1	1.8	2.0
S	2.0	1.6	1.8	2.0
Q442 B	1.3	1.1	1.1	2.1
E	0.9	0.7	0.7	1.5
Q444 C	1.2	1.2	2.2	1.3
Q445 C	0.4	1.4	0.3	0.4

				<b>(</b>		
	Q110	MUTE BUFFER	Q430	I IK BLK	D404	Tsw
	Q111	HV DC SW	Q431	RESET MUTE SW	D405	BLANKING
	Q112	MUTE BUFFER	Q432	BRIGHT MUTE SW	D406	SW SLICE
AY	Q113	DGC SW	Q433	RGB SW	D407	RGB SW
	Q114	V SYNC AMP	Q434	MUTE RGB SW	D408	BLANKING
	Q115	MIS ACTION PROTECT	Q435	OSD DOWN SW	D410	SW
	Q401	BRIGHT ABL	Q436	OSD DOWN SW	D411	SW
	Q402	PIY ABL	Q437	OSD DOWN SW	D414	OSD MODE SW
	Q403	V-BLK-SW	Q438	BLUE ONLY SW	D415	OSD BLK-INSERT
	Q404	B/O G AMP 9	Q439	BCH B/O DLY-EQ 1	D416	OSD B MIX
	Q405	B-BUFF 3	Q440	BCH B/O DLY-EQ 2	D417	OSD G MIX
CONT AMP	Q406	B/O G AMP 2	Q441	BCH B/O SW	D418	OSD R MIX
ИP	Q407	B/W-SW3	Q442	BCH BUFFER	D421	SW
	Q408	B/O R AMP 1	Q443	AUTO CMROMA SET UP AMP 1	D422	SW
	Q409	B-Y-BUFF	Q444	AUTO CMROMA SET UP AMP 2	D423	CLAMP
	Q410	Y BUFFER	Q445	BLUE ONLY SW	D424	PROTECT
	Q411	B/O R AMP 2			D425	CLAMP
	Q412	BCH BUFFER			D426	D. C. SHIFT
	Q413	BCH NORMAL SW	D100	<i>į</i>	D427	PROTECT
	Q414	R BUFFER	D101	PROTECT		
	Q415	G BUFFER	D102	PROTECT	]	
	Q416	B BUFFER	D103	OSP POSITION ADJ		
	Q417	B-BUFF	D104	PROTECT		
	Q418	OFF-MUTE-SW	D105	PROTECT	]	
	Q419	G-BUFF 3	D106		]	
	Q420	R-BUFF-3	D107	PROTECT		
	Q421	V-BLK-SW 1	D108		]	
	Q422	BLANKING	D109	MUTE	1	
	Q423	BLUE BUFFER	D111	PROTECT		
	Q424	BLK	D113	D. C. SHIFT	]	
	Q425	V-P BUFFER 1	D114	SW	]	
7000	Q426	V-P BUFFER 2	D115	PROTECT	1	
	Q428	SHARPNESS BUFFER	D335	SW	]	
	Q429	IK BUFFER	D401	SW 15	]	

Schematic diagram





## A (2/3) BOARD WAVEFORMS

TO O BOARD CN307

A (2/3) BOARD WA	VELOUING	
①	1	2
	The state of the s	Showof
1.0 Vp-p ( H )	5-V10E0 0.94 Vp-p ( H )	0.85 Vp-p ( H )
2	3	4
Jr. Jahr	10 mm	
5-VIDED 0.94 Vp-p ( H )	0.6 Vp-p ( H )	PAL 0.2 Vp-p ( H )
4	<b>⑤</b>	(S)
P-1-400 1-1-40	B	NTSCS SE
NTSC3.58 0.24 Vp-p ( H )	O. 23 Vp-p ( H )	NTSC3,58 0,24 Vp-p(H) s-video 0.25 Vp-p(H)
O Jumys	(e)	() ()
O.37 Vp-p(H)	0.33 Vp-p ( H )	S-VIDED 0.4 Vp-p(H)
<b>⑦</b>	8	9
ANALDO ROB 1.9 Vp-p ( H )	1.0 Vp-p ( H )	Pal (H )
9	(a)	(1)
B-1-1	- P	1 (1 11 (1 1
NTSC3.58 0.23 Vp-p ( H )	5-V10ED 0.25 Vp-p ( H )	5.4 Vp-p(H)
	With American American	5.4 Vp-p ( H )
NTSC3,58 0.23 Vp-p(H)	3-VIDED 0.25 Vp-p(H)	
NTSC3.58 0.23 Vp-p(H)	5-Y10ED 0.25 Vp-p(H)	PALO. 7 Vp-p ( H )
NTSC3.59 0.23 Vp-p ( H )	3-V10E0 0.25 Vp-p(H)	PAL O. 7 Vp-p ( H )
NTSC3.58 0.23 Vp-p(H)	S-VIDED 0.25 Vp-p(H) WISC3.58 S-VIDED 1.0 Vp-p(H)	PAL O. 7 Vp-p ( H ) NTSCS. 59 0.75 Vp-p ( H )
NTSC3.58 0.23 Vp-p(H)	S-VIDED 0.25 Vp-p(H) WISC3.58 S-VIDED 1.0 Vp-p(H)	PAL O. 7 Vp-p ( H ) NTSC3.59 0.75 Vp-p ( H )
PAL .85 Vp-p ( H )  (1)  PAL .85 Vp-p ( H )  (2)  (3)	S-VIDED O. 25 Vp-p ( H )  11  MTSC3.58  S-VIDED Vp-p ( H )  13	PALO.7 Vp-p ( H ) NTSC3.59 0.75 Vp-p ( H )
PAL (H)  (1)  (1)  (2)  (2)  (3)  (4)  (4)  (5)  (7)  (7)  (7)  (7)  (7)  (8)  (9)  (9)  (12)  (9)  (13)  (14)  (15)  (15)  (16)  (17)  (17)  (17)  (18)  (1	S-YIDED ( H )  (1)  MTSC3.58 S-YIDED ( H )  (3)  ANALDD ROB ( H )	PALO. 7 Vp-p ( H ) NTSCS. 58 0.75 Vp-p ( H )  ANALOS ROB 0.7 Vp-p ( H )
PAL (H)  (1)  (1)  (2)  (2)  (3)  (4)  (4)  (5)  (7)  (7)  (7)  (7)  (7)  (8)  (9)  (9)  (12)  (9)  (13)  (14)  (15)  (15)  (16)  (17)  (17)  (17)  (18)  (1	S-VIDED O. 25 Vp-p ( H )  11  MTSC3.58 S-VIDED 1.0 Vp-p ( H )  13  ANALDO ROB O. 7 Vp-p ( H )	PALO. 7 Vp-p ( H ) NTSC3.58 0.75 Vp-p ( H )  ANALOM ROB 0.7 Vp-p ( H )
PAL 85 Vp-p ( H )  (1)  PAL 85 Vp-p ( H )  (2)  3-V10ED 0.75 Vp-p ( H )	3-YIDED O. 25 VP-P ( H )  11  HT 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	PALO. 7 Vp-p ( H ) NTSCS. 50 0.75 Vp-p ( H )  ANALOS ROB 0.7 Vp-p ( H )
PAL DO POB O . 7 Vp - p ( H )  (1)  (2)  (3)  (4)  (4)  (5)  (6)  (7)  (7)  (7)  (8)  (9)  (9)  (12)  (13)  (14)  (15)  (15)  (16)  (17)  (17)  (18)	3-YIDED 0.25 Vp-p(H) 10 10 10 10 10 10 10 10 10 1	PALO. 7 Vp-p ( H ) NTSC3.59 0.75 Vp-p ( H )  ANALOM ROB 0.7 Vp-p ( H )
PAL DO POB O . 7 Vp - p ( H )  (1)  (2)  (3)  (4)  (4)  (5)  (6)  (7)  (7)  (7)  (8)  (9)  (9)  (12)  (13)  (14)  (15)  (15)  (16)  (17)  (17)  (18)	3-YIDED 0.25 Vp-p(H) 10 10 10 10 10 10 10 10 10 1	PALO. 7 Vp-p ( H ) NTSC3.58 0.75 Vp-p ( H )  ANALOS ROB 0.7 Vp-p ( H )  ANALOS ROB 1.4 Vp-p ( H )
PAL 85 Vp-p(H)  O. 23 Vp-p(H)  PAL 0. 85 Vp-p(H)  S-V10ED O. 75 Vp-p(H)  AMALOO ROB O. 7 Vp-p(H)	8-YIDED O. 25 VP-P ( H )  11  WISC3.58 S-YIDED VP-R ( H )  13  ANALDO ROB O. 7 VP-P ( H )  14  S-YIDED VP-P ( H )  15  ANALDO ROB VP-P ( H )	PALO. 7 Vp-p ( H ) NTSC3.59 0.75 Vp-p ( H )  ANALOS ROB 0.7 Vp-p ( H )  ANALOS ROB 1.4 Vp-p ( H )
PAL DO ROB DO P ( H )  (1)	8-YIDED O. 25 VP-P ( H )  11  WISC3.58 S-YIDED VP-R ( H )  13  ANALDO ROB O. 7 VP-P ( H )  14  S-YIDED VP-P ( H )  15  ANALDO ROB VP-P ( H )	PALO. 7 Vp-p ( H ) NTSC3.59 0.75 Vp-p ( H )  ANALOS ROB 0.7 Vp-p ( H )  ANALOS ROB 1.4 Vp-p ( H )
PAL (0. 85 Vp-p ( H )  (1)  (2)  (3)  (4)  (4)  (5)  (6)  (7)  (7)  (7)  (7)  (8)  (9)  (10)  (1	8-YIDED O. 25 VP-P ( H )  11  WISC3.58 S-YIDED VP-R ( H )  13  ANALDO ROB O. 7 VP-P ( H )  14  S-YIDED VP-P ( H )  15  ANALDO ROB VP-P ( H )	PALO. 7 Vp-p ( H ) NTSC3.59 0.75 Vp-p ( H )  ANALOS ROB 0.7 Vp-p ( H )  ANALOS ROB 1.4 Vp-p ( H )

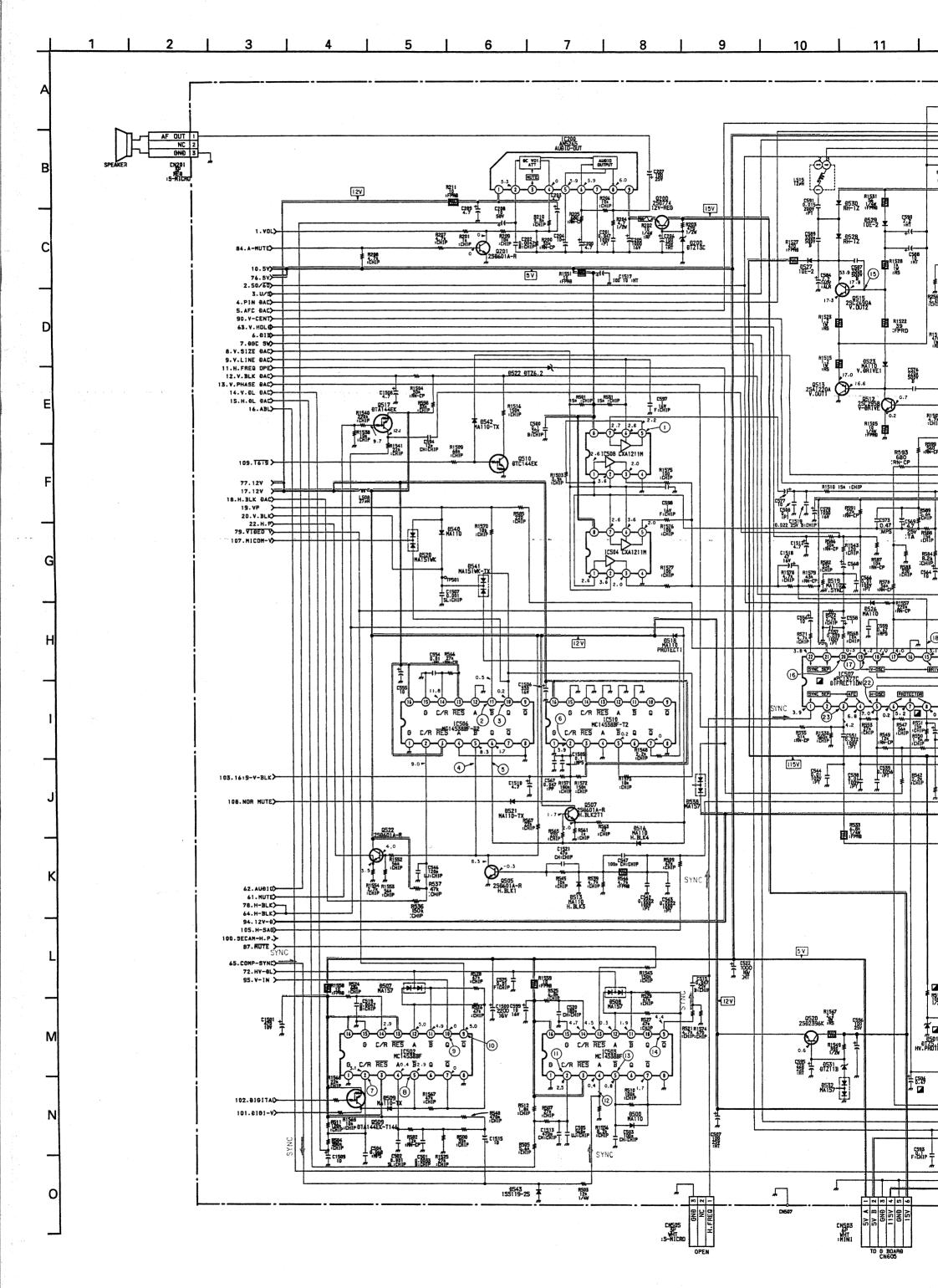
## A (2/3) BOARD \* MARK

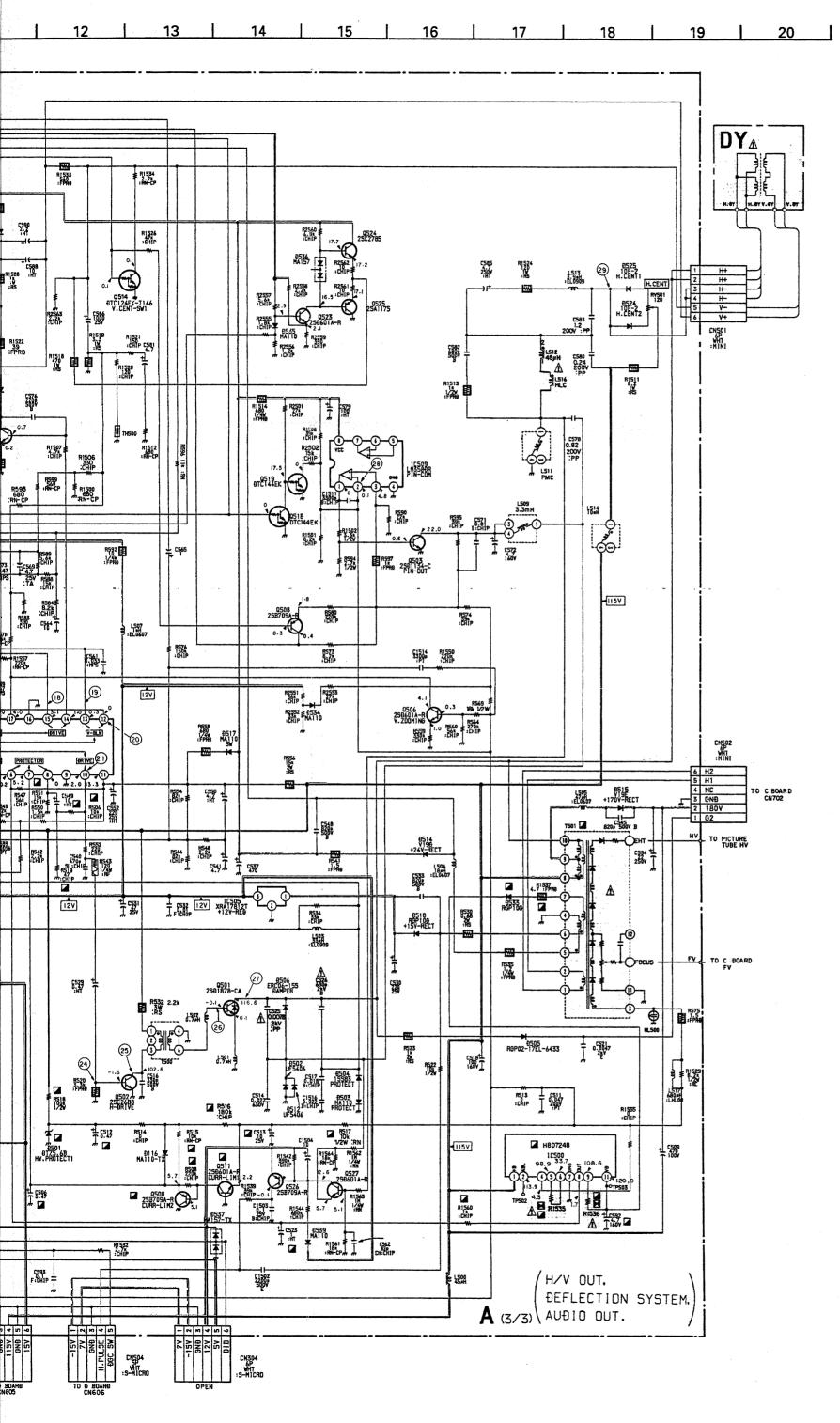
A (2/3	BOAF	3D *	MARK	
	PAL	NTSC	S-VIDEO	ANALOG
IC301 ①	2.8	3.58	3.0	2.3
<u>10301 ()</u>	2.0	2.8 1.8	1.7	3.5
IC302 ①	2.9	2.9	2.9	2.9
6	5.3	4.5	4.5	4.5
0	10.5	0	0	0
IC303 @	2.2	2.0	2.0	2.0
0	0.6 1.0	0.5	0.5 0.5	0.5
60	0.2	0.2	0.3	0.3
IC304 ④	2.2	2.2	2.2	2.2
0	9.4	9.4	9.4	9.4
<u>®</u>	7.3	2.5	2.6	2.5
<u>0</u>	7.3	2.5	2.6	2.5
(9)	1.9 2.5	2.2	2.2	2.2
IC305 ①	2.8	2.8	2.8	2.8
0	2.5	2.5	2.4	1.3
0	4.1	4.1	4.2	4.5
0	0.4	0	0	0.1
<b>1 2 2 3</b>	2.6	2.5 0.8	2.5 0.9	0.9
8	2.1	1.9	1,9	2.7
IC306 ①	8.1	8.1	8.1	0
0	0	0	0.1	4.4
IC307 ①	4.2	5.5	5.5	5.5
9	4.4	5.7	5.7	5.7
<u> </u>	4.2	5.5 5.5	5,5 5.5	5.5 5.5
6	4.2	5.5	5.5	5.5
0	4.2	5.5	5.5	5.5
IC309 ②	3.6	3.6	3.6	3.6
10010	0	0	0	4.4
1C310 ①	6.2	6.2 6.2	6.2	5.9 5.9
6	5.9	6.0	5.9	5.9
IC311 ①	0	6.2	6.2	6.2
<b>②</b>	6.2	6.2	6.2	5.9
9		5.3	6.2	5.9
6	3.3 5.9	2.9 5.9	2.9 5.8	5.9
(9)		0.4	0.5	0.7
IC312 ②		3.6	3.6	3.6
0		0	0.1	4.5
IC313 ①		76	6.3	6.3
IC314 @		7.6	2.9	0.1
IC315 ①		0.4	0.4	0.6
0	0.6	0.6	0.6	0.6
0		9.3	9.3	9.4
<u> </u>		2.5	2.5	7.2
GS (ES		0.4	0.4	0.6
IC317 @		2.0	2.0	12.0
. 6		12.0	12.0	12.0
•		10.6	10.5	10.7
8		9.4	9.1	9.4
IC318 ©	<del></del>	0.4	0.5	0.2
(6)		0.5	0.4	0.5
IC320 ①		6.3	6.3	0.5
(2		0	0	0
0		0	3.3	0
IC321 @		0.1	2.9	2.7
IC322 6		6.0	0,1 5.9	5.9
IC323 @		6.2	6.2	5.9
Q	0	5.6	5.6	5.6
IC324 @		6.2	6.2	5.9
1C326 (I		6.0	5.9	5.9
<u> </u>		5.9 5.9	5.8 5.8	5.9 5.9
(6		1.6	2.1	2.1
(		2.3	2.3	4.6
Q		10.8	-0.1	0
<u></u>		6.3	6.2	5.9
9		6.3 6.2	6.2	5.9
6		6.2	6.2	5.9
6	_	6.2	6.2	5.9
6		6.2	6.2	5.9
IC327 @		0	0	2.9
IC350 (		6.4	6.1	6.9
	6.2	6.2	6.0	6.4

1		PAL	NTSC	S-VIDEO	ANALOG
I		PAL	3.58	3-VIDEO	RGB
I	Q300 B	2.5	2.2	2.2	2.2
I	С	10.2	10.4	10.4	10.5
I	Ε	1.9	1.6	1.6	1.6
I	Q301 E	8.6	8.2	8.5	9.8
	Q303 E	5.7	5.7	5.5	5.7
	Q304 B	6.3	6.3	6.2	6.3
	Е	5.7	5.7	5.5	5.7
	Q305 B	8.6	8.2	8.5	9.8
ı	E	7.9	7.6	7.9	9.1
	Q307 E	1.4	1.1	1.4	2.7
	Q309 B	1.4	1.1	1.4	2.6
-	С	0.1	0.2	0.1	0
ı	E	0.7	1.7	0	1.8
	Q312 C	8.2	8.6	8.3	8.1
	Q313 B	8.2	8.6	8.2	8.1
	Ε	8.8	9.3	8.9	8.7
1	Q314 B	11.9	11.9	11.9	11.9
	С	0	0	0	0
1	Q315 B	3.3	2.9	3.2	3.3
	E	3.9	3.5	3.8	4.0
1	Q318 B	12.1	11.7	12.1	12.1
	C	1.0	1.2	1.0	0.9
	Q322 B	2.4	2.3	5.6	2.4
	E	1.8	1.8	5.0	1.8
	Q323 B	5.0	0	0	0
	С	0	3.5	3.5	3.6
	Q324 B	4.1	0	0	0
	С	0	0.8	0.8	0.9
	Q328 G	2.8	2.8	0	0
1	C329 G	0	1.6	2.9	2.8
	Q332 B	4.9	0	0	0
	С	0	4.4	4.3	4.4
i	Q333 B	1.7	1.9	1.7	1.7
	E	1.5	1.7	1.5	1.4
	Q339 B	12.3	12.5	12.5	12.3
	Q354 B	12.0	0	0	0
	E	12.0	0	0	-0.2
ì	Q358 E	2.2	0	2.2	2.2
	Q360 1	6.2	6.2	6.1	6.4
-	3	6.2	6.2	6	6.4
	5	1.3	2.2	5.3	3.8
	Q981 B	4.9	5.0	5.0	0.8
	C	0.1	0	0.1	2.9
	Q362 C	9.0	9.0	9.2	8.5
	Q364 C Q365 B	3.3	2.9 0.3	2.8	2.9
	Q369 B	0.4	0.8	0.4	4.9
	Q372 B			0.9	
	(W/4B		0		4.9

# A (2/3) BOARD

IC301	ACC OFF. GAIN-CONT. AMP	Q307	SYNC-CHIP-CLAMP 2	Q353	B/B-Y-BUFF-2	D306	SW
IC302	PAL-60-ID2	Q308	CLAMP-REF	Q354	B/W-SW2	D307	B/W-SW
IC303	O/S H BLANK/SPLIT POSITION	Q309	CLAMP-BUFF-2	Q355	258 TRIP SW	D308	SW
IC304	SYSTEM-SW	Q310	PAL TRAP BUFFER 2	Q356	MUTE SW	D309	B/W-SW
IC305	CHROMA-DEMOD	Q311	SLICER 2	Q357	ACC OFF AMP	D310	CLAMP
IC306	G/Y-SW	Q312	AMP-1	Q358	ACC OFF SW	D311	XTAL ADJ
IC307	AFC SW	Q313	AMP-2	Q359	ACC ON SW	D313	SW
IC309	R/R-Y/SW	Q314	SECAA SW	Q360	HOLD	D314	SLICER
IC310	BLACK-INSERT	Q315	BUFF	Q361	EXT-SYNC SW	D315	7.5 OPSW
IC311	SAMPLE	Q316	NT-COMB-D.CREF	Q362	OSD SW	D317	LEVEL-SHIFT
IC312	B/B-Y-SW	Q318	SYNC-SEF	Q363	TEST BUFFER	D320	SLICE
IC313	SYNC SELECT	Q319	Y-SW-BUFF	Q364	V-PULSE SW	D322	SLICE
IC314	Y-SW	Q320	BUFFER	Q366	BRIGHT UP SW 1	D323	SW
IC315	PULSE SELECT	Q321	B/W-SW 2	Q367	BRIGHT UP SW 2	D324	R-Y COLOR BALANCE ADJ
IC316	SECAM CHROMA SELECT	Q323	PAL SW	Q368	BRIGHT UP SW 3	D325	PULSE SW
IC317	H-PULSE-GATE	Q324	PAL SW	Q369	RGB SW	D326	LIMITTER
IC318	NOT-GATE	Q325	SYNC-SIG-BUFF	Q372	RGB SW	D327	SW
IC319	SW	Q326	Y-AMP-1	Q376	DIGITAL MODE SW 2	D332	RGB COMP SW
IC320	CHROMA BPF SELECT	Q327	Y-AMP-2	Q377	DIGITAL MODE SW 1	D333	H BLK SW
IC321	Y-D.LSW	Q328	443 SW	Q378	MUTE SW	D337	SECAM-SW
IC322	G/Y SW SELECT	Q329	358 SW	Q380	SPLIT SW	D338	SW
IC323	B/B-Y SW SELECT	Q330	R-Y-BUFF 1	Q381	SPLIT SW	D339	LIMITTER
IC324	R/R-Y SW SELECT	Q331	B-Y-BUFF 1	Q382	OVER SCAN SW	D341	D. C. SHIFT
IC325	AUDIO SELECT	Q332	358 SW	Q383	OVER SCAN SW	D344	SW
IC326	HOLD AMP	Q333	SYNC-BUFF	Q384	OVER SCAN SW	D345	OSD G CLAMP
IC327	SYNC SW	Q335	HV-DL SW	Q385	SPLIT SW	D346	OSD B CLAMP
IC350	BUFFER AMP	Q338	V-SYNC SSP 1	Q386	SPLIT SYNC SW	D347	OSD R CLAMP
	· .	Q339	V-SYNC SSP 2			D360	SW
		Q341	G/Y BUFFER			D361	SW
Q300	PHASE SHIFT	Q342	R/R-Y BUFFER	D300	PHASE ADJ	D362	D. C. SHIFT
Q301	SYNC-SHIP CLAMP 1	Q343	B/B-Y BUFFER	D301	SW	D363	D. C. SHIFT
Q302	BUFFER	Q345	MUTE SW	D302	D. C. SHIFT	D364	SW
Q303	VIDEO-IN-BUFF-1	Q350	INSERT-PULSE SW	D303	SECAM SW	D365	SECAM SW
Q305	CLAMP-BUFF-1	Q351	G/Y-BUFF-2	D304	SW	D381	SW
Q306	PAL TRAP BUFFER 1	Q352	R/R-Y-BUFF-2	D305	PROTECT		





20

A (3/3) BOARD WAVEFORMS

2.4 Vp-p( V )

7 (0/0) DONING 117		
①	2	3
1.0 Vp-p ( V )	11.0 Vp-p(V)	12.0 Vp-p(.V)
4	<b>S</b>	6
	ПП	111
11.0 Vp-p ( H )	12.0 Vp-p ( H )	6.3 Vp-p(V)
<b>⑦</b>	8	9
111	ПП	
3.9 Vp-p( V )	4.8 Vp-p ( V )	4.8 Vp-p ( V )
()	0	<b>(</b> 2)
<del></del>		
4.8 Vp-p(V)	4.0 Vp-p(H)	5.3 Vp-p(H)
13	(1)	(B)
111		
4.2 Vp-p(H)	4.8 Vp-p(H)	120 Vp-p ( V )
16	( <b>7</b> )	<b>(19</b>
11.0 Vp-p(V)	3.8 Vp-p ( V )	1.5 Vp-p(V)
()	20	2)
5.9 Vp-p(V)	11.2 Vp-p(V)	5.0 Vp-p(H)
23	23	29
M	NN	1777
4.8 Vp-p(H)	2.6 Vp-p(H)	3.8 Vp-p ( H )
<b>3</b>	@ <u></u>	0
MMM		
170 Vp-p ( H )	14.4 Vp-p ( H )	1000 Vp-p(H)
29	29	
	11-1-1-	
2 / Ve== ( V )	705 10-0 ( 11 )	

305 Vp-p(H)

A (3/3) BOARD A (3/3) BOARD

IC200 | AUDIO OUT
IC500 | X-RAY PROTECT
IC502 | V DELAY MONO-MULTI
IC503 | H DELAY MONO-MULTI
IC504 | V GAIN-CONT AMP 2
IC505 | +12V REG
IC506 | H BLK MONO-MULTI
IC507 | DEFLECTION
IC508 | V GAIN-CONT AMP 1
IC509 | PIN COMPLETION
IC510 | 16:9 V BLK MONO-MULTI Q200 +12 REG
Q201 MUTE SW
Q500 CURR LIM 2
Q501 H OUT
Q502 H DRIVE
Q503 PIN OUT
Q505 H BLK 1
Q506 V ZOOMING
Q507 H BLK BUFFER
Q508 50/60 SWITCH
Q509 DIGITAL V SWITCH
Q510 16:9 SWITCH
Q511 CURR LIM 1
Q512 V DRIVE
Q513 V OUT 1
Q514 50/60 SWITCH
Q515 V OUT 2
Q517 H-V PHASE LOCK SW
Q518 U/S SWITCH 1
Q519 U/S SWITCH 2
Q520 +12V REG
Q522 H PULSE BUFFER
Q523 V CENT OUT 2
Q525 V CENT OUT 2
Q526 FBT +12V FAILURE SW
Q527 FAILURE 
 D116
 CURR LIMITER

 D200
 AUDIO DC SHIFT

 D500
 SPEED UP

 D501
 HV PROTECT

 D502
 PIN DAMPER

 D503
 PROTECT

 D504
 PROTECT

 D505
 G2 RECT

 D506
 DAMPER

 D507
 HV DELAY SWITCH

 D508
 HV DELAY SWITCH

 D509
 SWITCH

 D510
 +15V RECT

 D512
 PIN DAMPER 2

 D513
 H BLK

 D514
 +24V RECT

 D515
 +170V RECT

 D516
 H BLK

 D517
 SWITCH

 D518
 PROTECT

 D519
 V SYNC

 D520
 MICOM SWITCH

 D521
 MUTE SWITCH

 D522
 DC UP

 D523
 BIAS

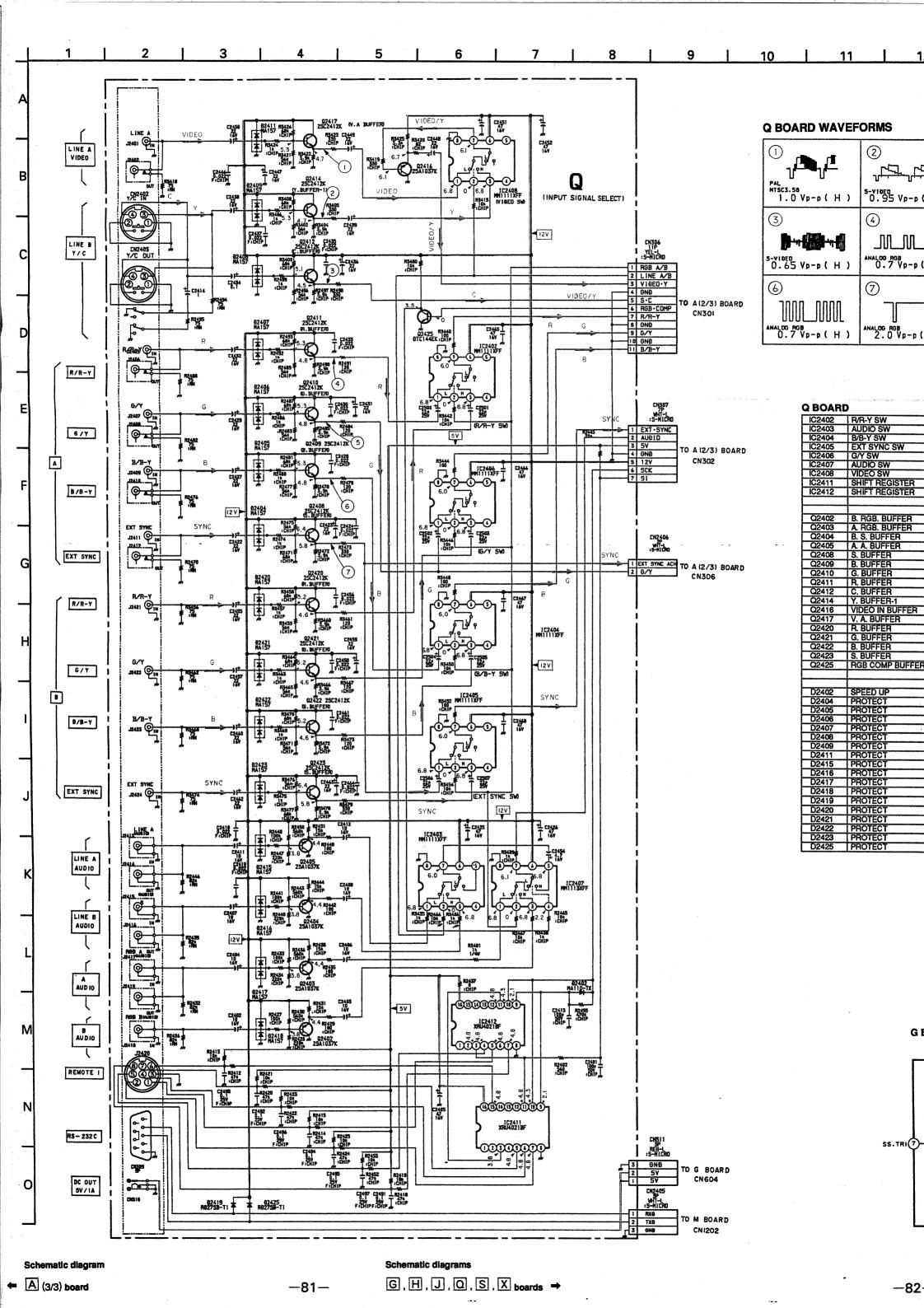
 D524
 H CENT

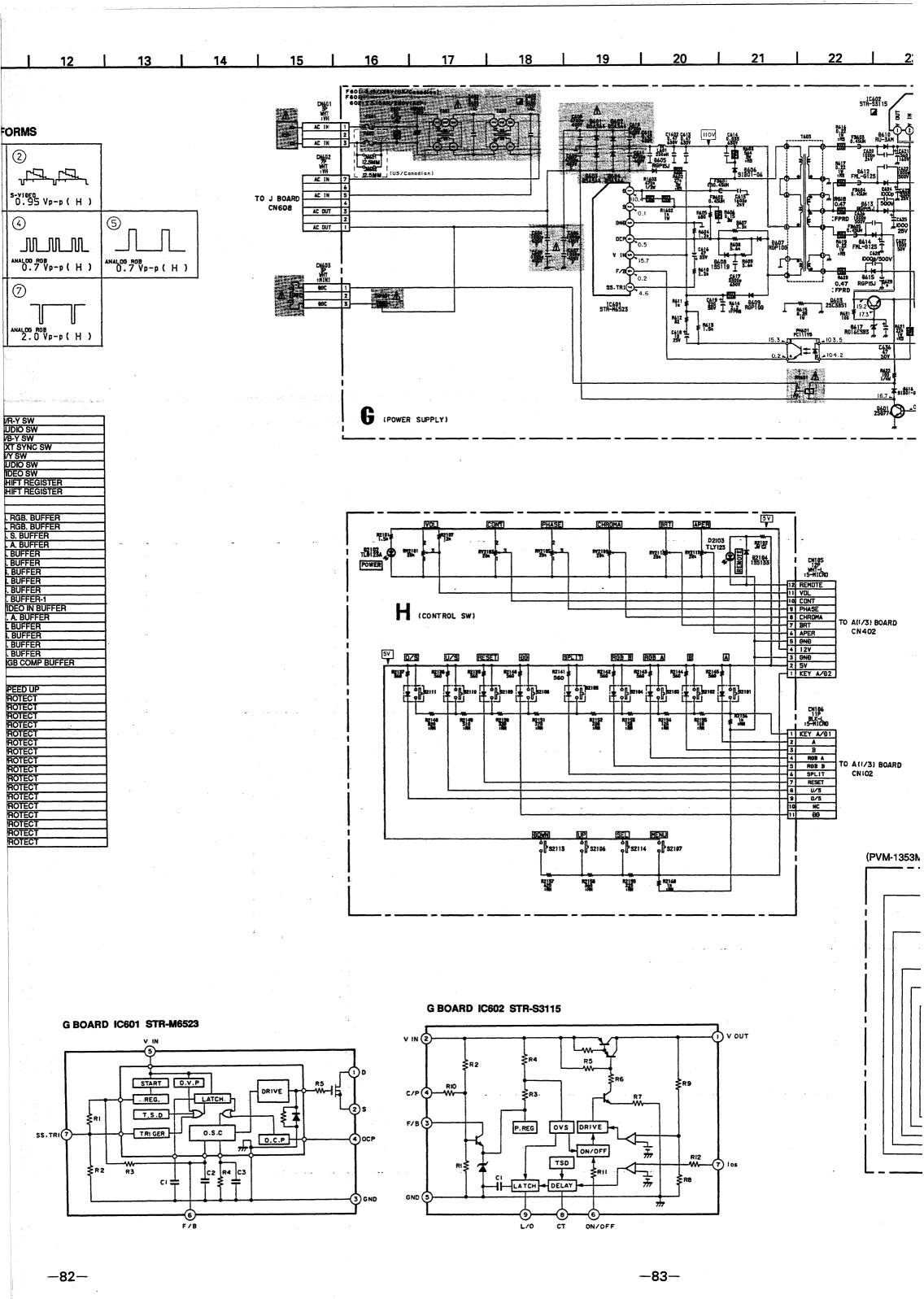
 D525
 H CENT

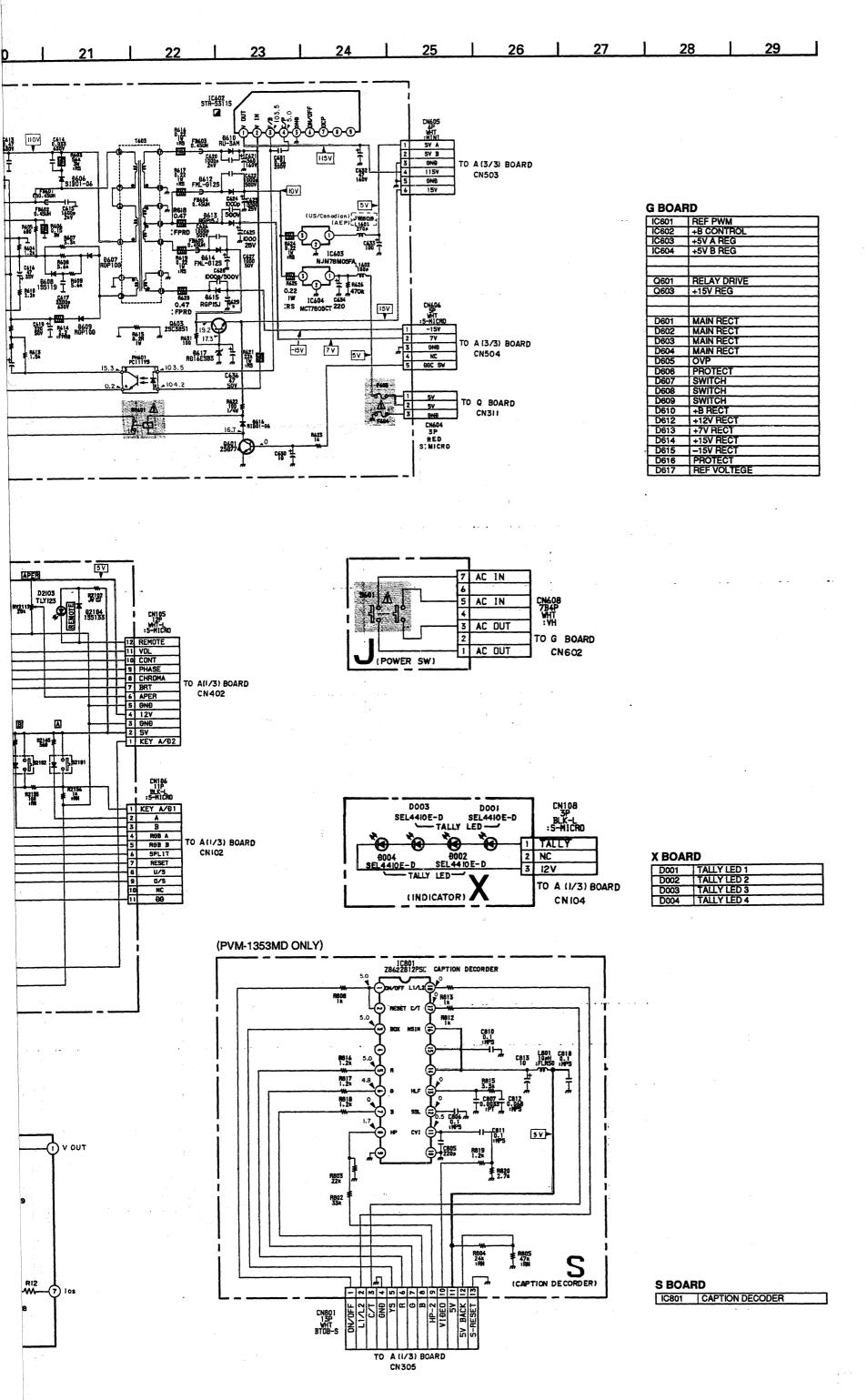
 D526
 50/60 SWITCH

 D527
 DC LIMITER

 D528
 PUMP-UP







[INPUT SIGNAL SELECT]

[CONTROL SWITCH]

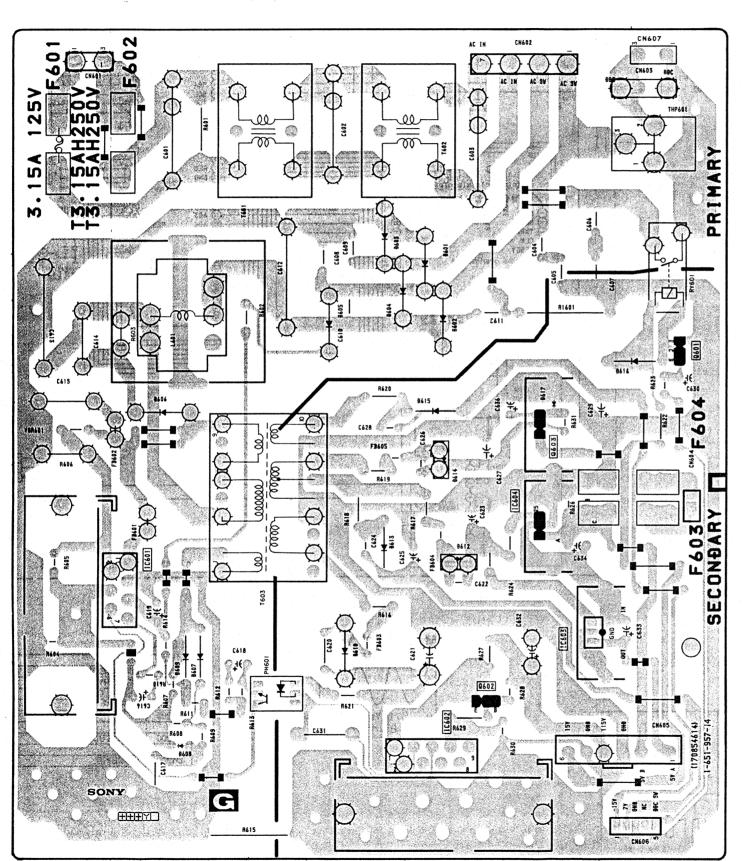
[CAPTION DECORDER]

X

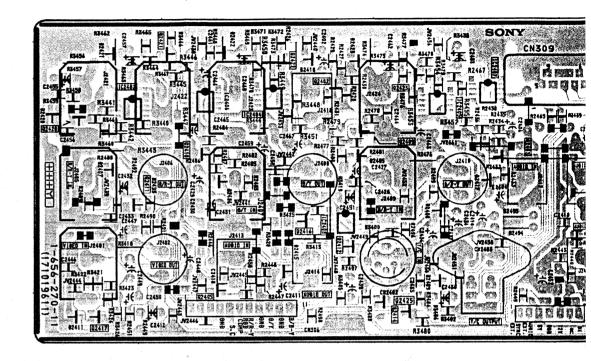
[INDICATOR]

[POWER SWITCH]

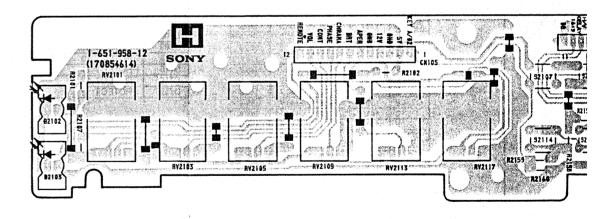
- G BOARD -

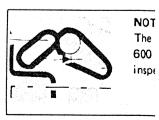






- H BOARD -





OL SWITCH]

S

[CAPTION DECORDER]

PRIMAR

SECOI

adya.

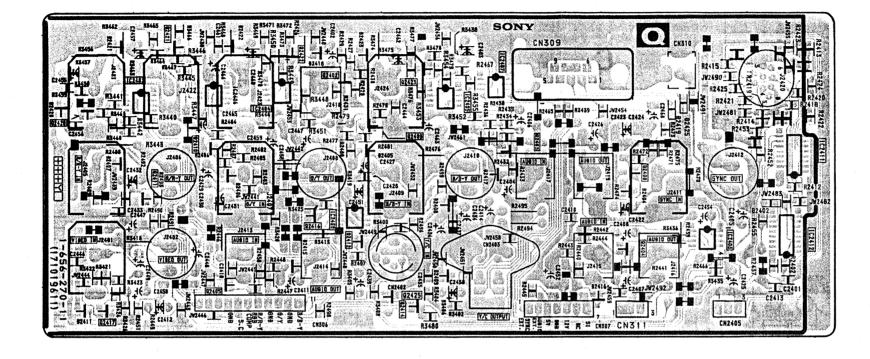
X

[INDICATOR]

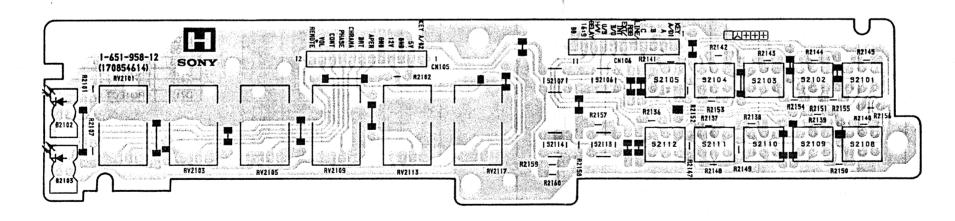
J

[POWER SWITCH]

- Q BOARD -



- H BOARD -

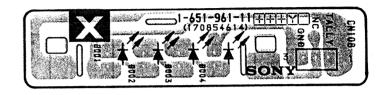


0

### NOTE:

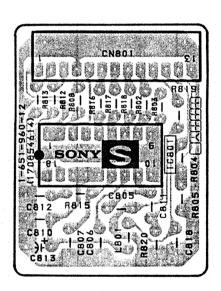
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

- X BOARD -

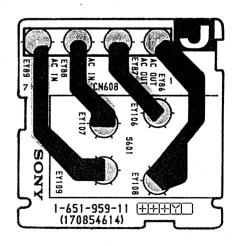


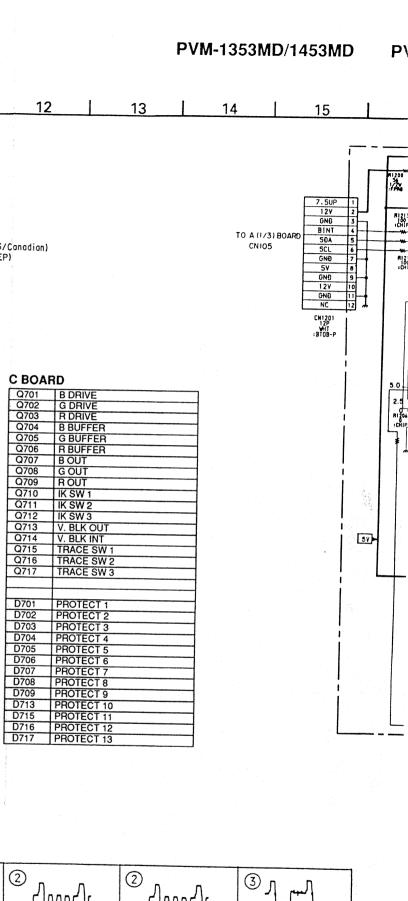
(PVM-1353MD ONLY)

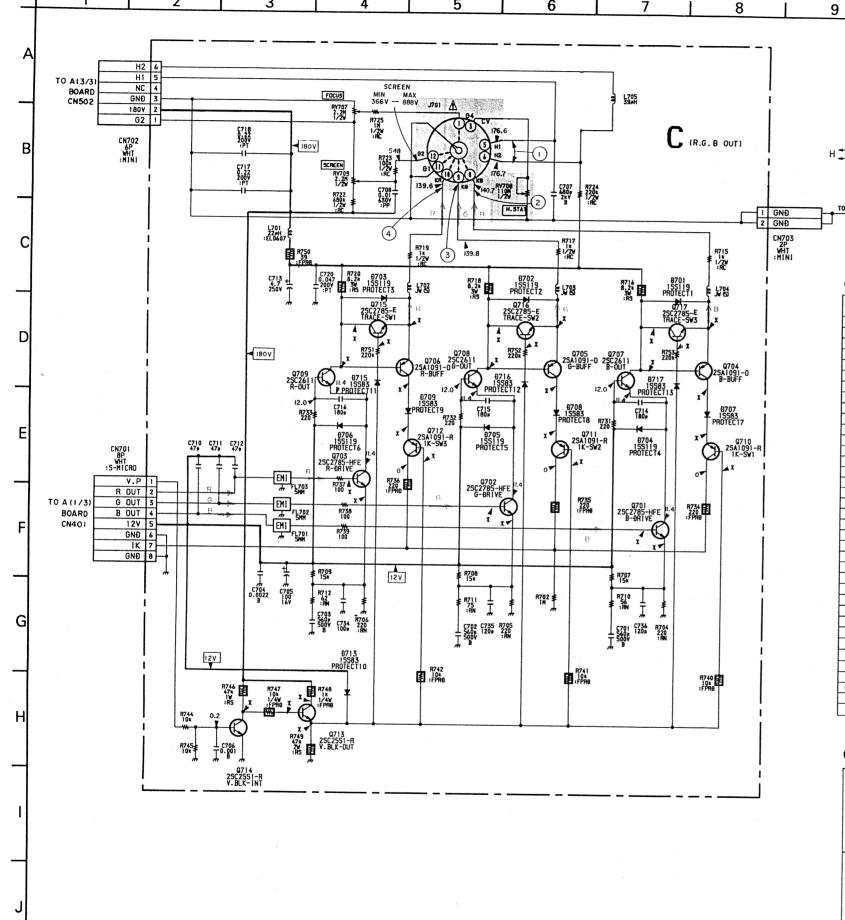
-SBOARD-



- J BOARD -







# C BOARD WAVEFORMS

139.2

141.7

138.2

10

KG KB G2

CV KR G1 G4 HV

V901

C BOARD \* MARK

Q701 B

Q708 C

Q702 B 2.0 E 1.5

3.58

2.0 1.73 1.8

1.1

Q704 B 143.6 153.9 144.9 143.8 C 129.0 135.4 31.2 111.5

E 139.7 150.3 140.4 140.1

C 124.9 132.3 60.4 106.6 E 138.3 151.3 140.7 138.5

134.5 141.2 103.2 114.7

140.8

145.0

144.9 143.7

140.7 139.4

145.1 141.8

140.6 138.4

Q706 B 149.7 160.4 144.9 148.6

Q709 C 149.8 160.6 144.9 148.5

Q710 B 172.8 174.3 167.0 173.5

E 160.6 162.3 154.1

Q712 B 172.9 174.0 167.0 173.5 E 161.6 164.1 154.5 161.4

Q713 B 172.8 173.9 166.8 173.5 C 184.2 184.7 176.6 183.8 E 173.3 174.3 167.2 173.9

Q714 C 173.6 174.5 167.4 174.1

Q715 B 146.7 157.6 140.3 145.7

152.5

155.2

151.4

Q717 B 140.9 151.7 140.6 141.2 C 143.6 154.1 144.9 143.8 E 139.8 150.5 140.4 140.0

C 149.5 160.6 144.9 148.5 E 146.1 157.2 140.7 145.0

E 160.9 162.9 154.0 161.2

1.7 1.8

1.2

E 1.4 1.1 1.2

E 1.3 1.0 1.2

Q703 B 1.9 1.6 1.8

Q705 B 141.7 154.9 145.0

146.2 157.1

143.8 154.0

141.9 155.2

Q711 B 172.8 174.3 167.0

11

S-VIDEO ANALOG

RGB

2.0

1.4

2.0

1.9

1.3

145.0

173.5

161.3

14FZ4/14FZ - 4 (US/Canadian) 14FZ 2/14FZ - 2 (AEP)

12

C BOARD

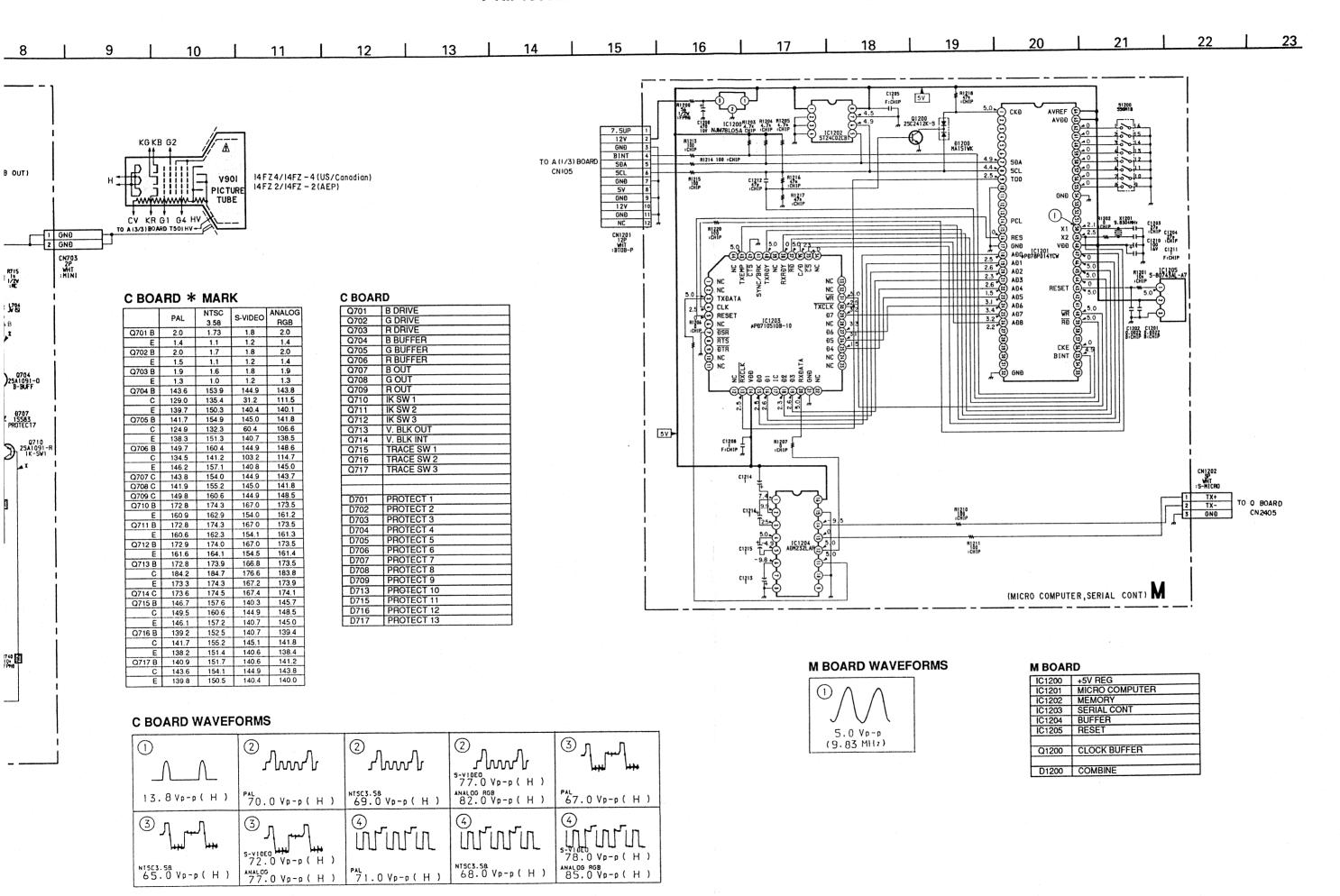
Q701 B DRIVE Q702 G DRIVE Q702 G DRIVE Q703 R DRIVE Q704 B BUFFER

Q705 G BUFFER
Q706 R BUFFER
Q707 B OUT
Q708 G OUT
Q709 R OUT

Q711 IK SW 2

Q712 | IK SW 3

	2 . Though	<sup>2</sup> //w//	2 	3 J
3 J	(3) D D	69.0 Vp-p(H)	82.0 Vp-p ( H )	67.0 Vp-p(H)
NISC3.58	5-V10E0 HH HH 72.0 Vp-p ( H )	Mulu	Mulur	ПТПТП 78.0 vp-p ( н )
65.0 Vp-p ( H )	ANALOG 77.0 Vp-p ( H )	71.0 Vp-p(H)	NTSC3.58 68.0 Vp-p ( H )	ANALOG RGB 85.0 Vp-p ( H )

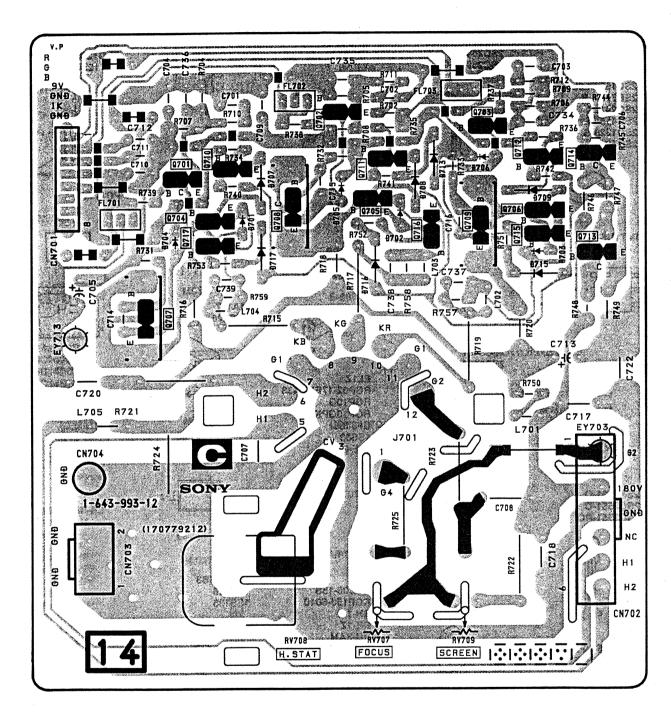


C [R. G. B OUT]

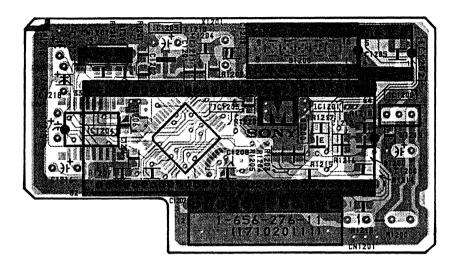
M

[MICRO COMPUTER, SERIAL CONT]

### - C BOARD -

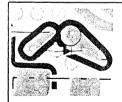


### - M BOARD -



### Note:

- Eastern from the side which enables seeing.



#### NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

# 6-5. SEMICONDUCTORS

#### ADM232LAR-REEL BU4053BCF MC14052BF MC14094BF MC14538BF

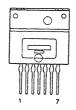
SN74HC4040ANS



### H8D7249



STR-M6523



UPD78P014YCW UPD78013YCW-Y04



AN5265



MCT78M05FA NJM78M05FA **TA7805S** 



ST24C02CB1



XRA17812T





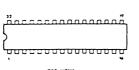
**BA10324AF** LM324DR

MC14024BF MC14066BF MC14584BF

M51279FP

M62358FP-E1

NJM78L05A



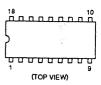
33348888888

S-80743AL-A7



UPC1377C

Z8612812PSC



ARRARRA RESERVE

(TOP VIEW)

XRU4066BCF-E2





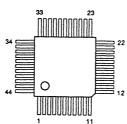


UPD6451AGT-632-E2

(TOP VIEW)



UPC71051GB-10



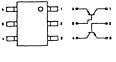
**CXA1478S** 

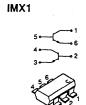


(TOP VIEW)

-93-

DTA144EK DTC124EK DTC124EK 2SA1037K 2SA1162-G 2SC1623-L5L6 2SB709A-R 2SC2412K 2SC2412K 2SC4154-E 2SD1328-S 2SD601A









2SA1175-HFE 2SC2785-HFE

2SA1220A 2SC2611 2SC2688 2SC2690A-Q



2SC2958-L 2SD774-3 2SD774-34



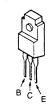
2SC3851 2SD1134-C



2SD1878-CA



2SD2396K



2SK94



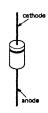
DSA3A4 ERC38-06 V19E V19G



DTZ11B DTZ13C DTZ3.6A DTZ5.6B DTZ6.2 MA110 RD4.7SB 1SV230-TPH3 1SV232-TPH3



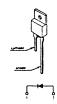
EL1Z RGP02-17EL-6433 RGP10G RGP10GPKG23 UF5406 1SS83 10E-2



ERC06-15S RGP15J-6040 RH-1A RH-1Z RU-3AM SIB01-06



FML-G12S



MA151WK 1SS184



MA157 1SS226





RD10SB1



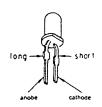
RD16ESB3 1SS119 1SS133



1S2835 1S2836



SEL4410E-D SLP281C-50 TLG123A TLY123



PC111YS





# **SECTION 7 EXPLODED VIEWS**

- NOTE:
   Items with no part number and no description are not stocked because they are seldom required for routine service.
   The construction parts of an assembled part are indicated with a collation number in the remark column.
   Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

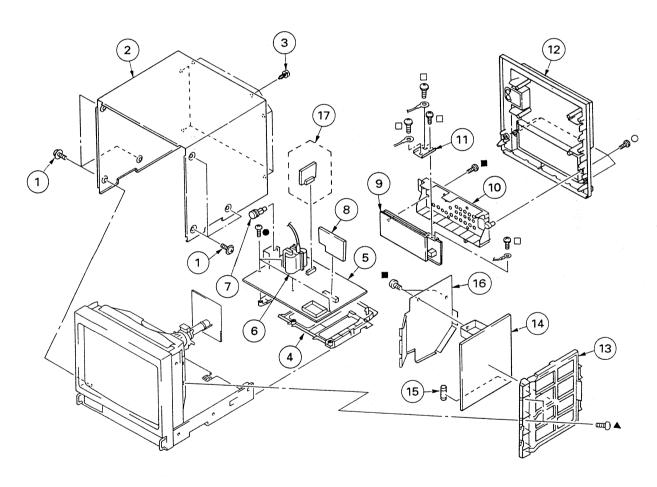
The components identified by shading and mark A are critical for safety.

Replace only with part number specified.

Les composants identifies par une trame et une marque 🐧 sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

### 7-1. CHASSIS

7-685-648-79 7-685-646-79 ●:+BVTP 3×12 ■:+BVTP 3×8 ▲:+BVTT 4×8
○:+BVTP 4×16
□:+PS 4×8 7-682-561-04 7-685-663-79 7-682-661-09



REF.NO. PART NO.	DESCRIPTION REMAR	REF.	NO. PART NO.	DESCRIPTION REMARK
1 4-847-802-11 2 X-4032-539-2 3 4-391-825-01 4 *4-043-690-01 5 *A-1297-469-A	RIVET, NYLÔN	11 12 13 14	*4-043-678-01 4-043-687-01 *4-043-689-01 *A-1316-215-A *A-1316-216-A	TERMINAL, GROUND COVER, REAR BRACKET, G G BOARD, COMPLETE (PVM-1453MD) G BOARD, COMPLETE (PVM-1353MD)
6	RIVET, T TYPE M BOARD, COMPLETE	15 16 17	Δ.1-532-745-11 Δ.1-576-230-11 *4-047-436-01 *A-1390-391-B	

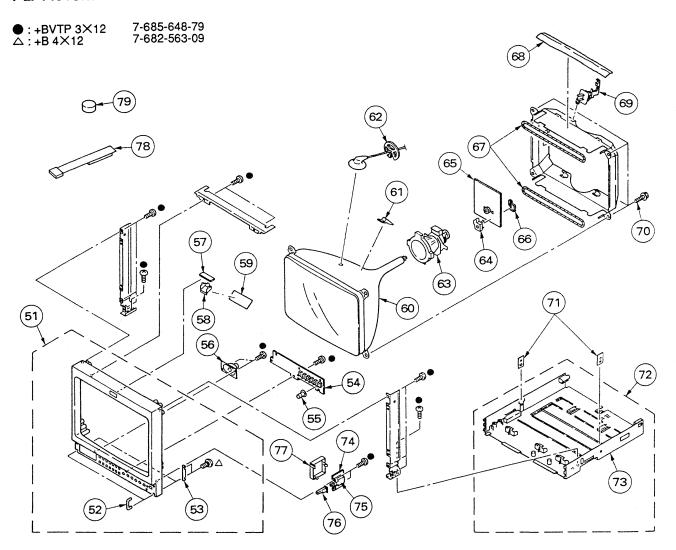
The components identified by shading and mark  $\triangle$  are critical for safety.

Replace only with part number

specified.

Les composants identifies par une trame et une marque  $ilde{\Lambda}$ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

# 7-2. PICTURE TUBE



REF. N	O. PART NO.	DESCRIPTION R	EMARK	REF.NO. PART NO.	DESCRIPTION	REMARK
51 52 53 54 55	X-4032-540-1 4-043-680-11 *4-043-679-01 *A-1372-094-A X-4030-162-3	HANDLE, PROTECTOR REINFORCEMENT, HANDLE H BOARD, COMPLETE	2,53		CLOTH, PROTECTION HOLDER, LEAD	
56 57 58 59	1-544-063-12 *A-1390-498-A *4-043-682-01 4-044-606-01	X BOARD, COMPLETE REFLECTOR, LED		72 X-4031-711-1 73 4-391-840-04 74 *A-1388-166-A 75 Δ.1-692-921-11 76 4-043-683-01	J BOARD, COMPLETE	73
60 61	▲ 8-734-822-05 ▲ 8-734-523-05	PICTURE TUBE 14FZ-4 (PVM-1353MD) PICTURE TUBE 14FZ4 (PVM-1353MD) PICTURE TUBE 14FZ-2 (PVM-1453MD) PICTURE TUBE 14FZ2 (PVM-1453MD) SPACER, DY		77 4-043-681-01 78 X-4309-608-0 79 1-452-032-00		
62 63 64 65 66	*3-704-372-01 <b>A.</b> 8-451-329-12 *4-374-912-01 *A-1331-299-A *4-374-913-01	DEFLECTION YOKE Y14FZAM COVER (MAIN), CV VOL C BOARD, COMPLETE				

# SECTION 8 ELECTRICAL PARTS LIST

Α

NOTE:

The components identified by shading and mark  $\, \hat{\Delta} \,$  are critical for safety.

Replace only with part number specified.

Les composants identifies par une trame et une marque Å sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

#### RESISTORS

- · All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

- The components identified by in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- \* : Selected to yield optimum performance.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please

						ordering pa	· ·	, piease	
REF.NO.	PART NO.	DESCRIPTION		REMARK	REF.NO.	PART NO.	DESCRIPTION		REMARK
	*A-1297-469-A 1-540-044-11 *4-030-359-01	A BOARD, COMPLETE *******************  SOCKET, IC HEAT SINK, H. PIN HOLDER, IC PLATE (CF), SHIELD SPACER, MICA  SCREW (M3X10), P, SW (+)			C171 C174 C175 C200 C201	1-163-251-11 1-163-243-11 1-163-109-00 1-124-927-11 1-106-383-00	CERAMIC CHIP 100PF CERAMIC CHIP 47PF CERAMIC CHIP 47PF ELECT 4.7MF	5% 5% 5% 20% 10%	50V 50V 50V 50V 100V
	*4-043-154-01 *4-043-994-01 4-363-414-00 4-382-854-11	HOLDER, IC PLATE (CF), SHIELD SPACER, MICA SCREW (M3X10), P. SW (+)			C202 C203 C204 C205	1-124-927-11	CERAMIC CHIP 0.0047MF ELECT 4.7MF ELECT 10MF ELECT 1000MF ELECT 100MF	10% 20% 20% 20%	50V 50V 50V 16V
	. 502 05. 11	mrn.			C206				25V 25V
BPF400	1-236-363-11	TER> FILTER, BAND PASS ACITOR>			C207 C208 C209 C304 C305	1-124-476-11 1-124-907-11 1-124-927-11 1-164-004-11 1-163-125-00	ELECT 100MF ELECT 10MF ELECT 4.7MF CERAMIC CHIP 0.1MF CERAMIC CHIP 220PF	20% 20% 10% 5%	50V 50V 25V 50V
	<cap< td=""><td>ACITOR&gt;</td><td></td><td></td><td>C306</td><td>1-163-031-11</td><td>CERAMIC CHIP 0.01MF</td><td></td><td>50V</td></cap<>	ACITOR>			C306	1-163-031-11	CERAMIC CHIP 0.01MF		50V
C105 C114 C115 C116 C117	1-163-251-11 1-163-031-11 1-163-031-11 1-163-031-11	CERAMIC CHIP 100PF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF	5%	50V 50V 50V 50V 50V	C310 C311 C312 C313	1-124-925-11 1-163-145-00	CERAMIC CHIP 0.01MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.047MF ELECT 2.2MF CERAMIC CHIP 0.0015MF	20% 5%	25V 25V 50V 50V
C118 C119 C121 C123	1-163-125-00 1-165-319-11 1-163-237-11 1-165-319-11	CERAMIC CHIP 220PF CERAMIC CHIP 0.1MF CERAMIC CHIP 27PF CERAMIC CHIP 0.1MF CERAMIC CHIP 100PF	5% 5%	50V 50V 50V 50V 50V	C314 C315 C316 C318 C325	1-163-249-11 1-124-907-11 1-124-477-11 1-124-907-11 1-124-907-11	CERAMIC CHIP 82PF ELECT 10MF ELECT 47MF ELECT 10MF ELECT 10MF	5% 20% 20% 20% 20%	50V 50V 25V 50V 50V
C124 C132 C133 C134 C135	1-163-141-00			50V 50V 50V 50V 50V	C349 C350 C352	1-163-141-00 1-163-141-00 1-163-031-11		5% 5%	50V 50V 50V 50V 50V
C136 C140 C141 C142 C143 C144	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V 50V 50V 50V 50V	C353 C354 C355 C356 C356 C357	1-165-319-11 1-163-121-00 1-124-903-11 1-124-927-11 1-163-031-11	CERAMIC CHIP 0.1MF CERAMIC CHIP 150PF ELECT 1MF ELECT 4.7MF CERAMIC CHIP 0.01MF	5% 20% 20%	50 V 50 V 50 V 50 V 50 V
C145 C154 C155 C156 C157	1-165-319-11 1-163-037-11 1-163-023-00 1-163-019-00 1-163-019-00	CERAMIC CHIP 0.0022MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.022MF CERAMIC CHIP 0.002MF CERAMIC CHIP 0.015MF CERAMIC CHIP 0.0068MF CERAMIC CHIP 0.0068MF	10% 10% 10% 10%	50V 25V 50V 50V 50V	C362	1-163-031-11	CERAMIC CHIP 0.01MF ELECT 47MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF		50V 25V 50V 50V 50V
C158 C159 C161 C162 C164	1-163-809-11 1-163-037-11	CERAMIC CHIP 0.047MF CERAMIC CHIP 0.022MF	10% 10%	25V 25V 16V 50V	C363 C364 C365 C366 C367	1-163-099-00 1-163-031-11 1-106-343-00 1-163-031-11 1-163-031-11	CERAMIC CHIP 18PF CERAMIC CHIP 0.01MF MYLAR 0.001MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF	5% 10%	50V 50V 100V 50V 50V
C165 C166 C167 C168	1-165-319-11 1-164-004-11 1-124-472-11 1-124-472-11	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF ELECT 470MF ELECT 470MF	10% 20% 20%	50V 25V 10V 10V	C368 C369 C370 C371 C372	1-124-907-11 1-164-298-11 1-124-477-11 1-124-477-11 1-163-031-11	ELECT 10MF CERAMIC CHIP 0.15MF ELECT 47MF ELECT 47MF CERAMIC CHIP 0.01MF	20% 10% 20% 20%	50 V 25 V 25 V 25 V 50 V
C169	1-164-232-11	CERAMIC CHIP O.OIMF	10%	50V	C373	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50 <b>Y</b>



REF.NO.	PART NO.	DESCRIPTION		REMARK	REF.NO.	PART NO.	DESCRIPTION		REMARK
C374 C375 C376 C377 C378	1-124-903-11 1-163-125-00 1-124-902-00 1-163-809-11 1-163-809-11	ELECT 1MF CERAMIC CHIP 220PF ELECT 0.47MF		50V 50V 50V 25V 25V	C444 C445 C446 C447	1-165-319-11 1-163-809-11 1-163-089-00 1-163-263-11	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.047MF CERAMIC CHIP 6PF CERAMIC CHIP 330PF	10% 0.25PF 5%	50V 25V 50V 50V
C379 C380 C381 C382 C383	1-124-360-00 1-163-031-11	CERAMIC CHIP 0.01MF ELECT 1000MF CERAMIC CHIP 0.01MF CERAMIC CHIP 47PF ELECT 47MF	20% 5% 20%	50V 16V 50V 50V 25V	C448 C449 C450 C451 C452	1-164-004-11 1-163-263-11	CERAMIC CHIP 47PF CERAMIC CHIP 10PF  CERAMIC CHIP 0.047MF CERAMIC CHIP 0.1MF CERAMIC CHIP 330PF	E 9/	50V 50V 25V 25V 50V 50V
C384 C385 C386 C387 C388	1-124-477-11	CERAMIC CHIP 82PF ELECT 47MF	5% 20% 20%	50V 25V 50V 50V 50V	C453 C454 C455 C456 C457 C458	1-163-243-11	CERAMIC CHIP 350PF CERAMIC CHIP 47PF  CERAMIC CHIP 330PF CERAMIC CHIP 6PF CERAMIC CHIP 0.01MF CERAMIC CHIP 82PF CERAMIC CHIP 0.1MF	5% 5% 0.25PF 5%	50Y
C390 C391 C392 C393 C394	1-163-243-11 1-124-477-11 1-164-298-11 1-164-298-11 1-124-477-11	CERAMIC CHIP 47PF ELECT 47MF CERAMIC CHIP 0.15MF CERAMIC CHIP 0.15MF ELECT 47MF	5% 20% 10% 10% 20%	50V 25V 25V 25V 25V	C459 C460 C461 C462 C463	1-163-119-00	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF CERAMIC CHIP 120PF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF	10% 5%	50 V 25 V 50 V 50 V 50 V
C395 C396 C397 C398 C399	1-104-299-11 1-124-477-11 1-124-477-11 1-124-477-11	ELECT 47MF ELECT 47MF ELECT 47MF	10% 20% 20% 20%	50V 25V 25V 25V 25V	C464 C465 C466 C467	1-164-299-11 1-163-097-00 1-163-119-00	CERAMIC CHIP 0.22MF  CERAMIC CHIP 15PF  CERAMIC CHIP 120PF  CERAMIC CHIP 120PF  CERAMIC CHIP 0.022MF  CERAMIC CHIP 47PF	10% 5% 5% 10%	25V 50V 50V 25V
C400 C401 C402 C403 C406	1-164-004-11 1-164-346-11 1-124-910-11 1-164-232-11 1-124-916-11	CERAMIC CHIP 1MF ELECT 47MF CERAMIC CHIP 0.01MF ELECT 22MF	10% 20% 10% 20%	25V 16V 50V 50V 50V	C470 C471 C472 C473 C475	1-163-243-11 1-163-105-00 1-163-031-11 1-163-031-11 1-163-031-11	CERAMIC CHIP 33PF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF		50 V 50 V 50 V 50 V
C407 C408 C409 C410 C411	1-163-031-11 1-124-916-11 1-164-004-11	CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF ELECT 22MF CERAMIC CHIP 0.1MF	20% 10% 20% 10%	25 V 50 V 50 V 50 V 25 V	C479 C482	1-164-299-11 1-124-907-11 1-163-121-00 1-124-472-11	CERAMIC CHIP 0.01MF  CERAMIC CHIP 0.22MF ELECT 10MF CERAMIC CHIP 150PF ELECT 470MF	10% 20% 5% 20%	50 V 25 V 50 V 50 V 10 V
C414 C415 C416 C417 C418	1-124-907-11 1-164-232-11 1-164-232-11 1-164-182-11	CERAMIC CHIP 0.01MF ELECT 10MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.0033MF	20% 10% 10% 10%	50V 50V 50V 50V 50V	C483 C484 C485 C486 C487 C488	1-163-249-11 1-163-113-00 1-163-113-00 1-163-249-11 1-163-235-11	CERAMIC CHIP 82PF  CERAMIC CHIP 68PF  CERAMIC CHIP 68PF  CERAMIC CHIP 82PF  CERAMIC CHIP 22PF  CERAMIC CHIP 15PF	5% 5% 5% 5%	50V 50V 50V 50V 50V
C420 C421 C422 C423	1-164-222-11 1-124-903-11 1-163-809-11	CERAMIC CHIP 0.047MF CERAMIC CHIP 0.22MF ELECT 1MF CERAMIC CHIP 0.047MF	20% 10%	257	C490	1-164-336-11	CERAMIC CHIP 0.33MF CERAMIC CHIP 0.33MF CERAMIC CHIP 0.33MF CERAMIC CHIP 0.047MF CERAMIC CHIP 0.047MF	10%	25V 25V 25V 50V 50V
C424 C426 C427 C428 C429	1-163-809-11 1-163-243-11 1-163-031-11 1-124-119-00 1-163-031-11	CERAMIC CHIP 0.047MF CERAMIC CHIP 47PF CERAMIC CHIP 0.01MF ELECT 330MF CERAMIC CHIP 0.01MF	10% 5% 20% 20%	25V 50V 50V 16V 50V	C494 C495 C496 C497 C498 C499	1-124-907-11 1-163-239-11 1-163-011-11 1-124-925-11 1-163-031-11	ELECT 10MF CERAMIC CHIP 33PF CERAMIC CHIP 0.0015MF ELECT 2.2MF CERAMIC CHIP 0.01MF	20% 5% 10% 20%	50V 50V 50V 50V 50V
C430 C431 C432 C433 C434	1-124-119-00 1-165-319-11 1-164-004-11 1-163-235-11 1-163-031-11	ELECT 330MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF CERAMIC CHIP 22PF CERAMIC CHIP 0.01MF	10% 5% 0.25PF	50V 25V 50V 50V	C500 C501 C502	1-164-004-11 1-164-182-11 1-163-141-00 1-163-251-11 1-136-495-11	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.003MF CERAMIC CHIP 0.001MF CERAMIC CHIP 100PF FILM 0.068MF	10% 10% 5% 5% 5%	25V 50V 50V 50V 50V
C435 C436 C437 C438 C439	1-163-089-00 1-164-004-11 1-164-004-11 1-163-809-11 1-163-031-11	CERAMIC CHIP 6PF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.047MF CERAMIC CHIP 0.047MF CERAMIC CHIP 0.01MF	10% 10% 10% 10%	25V 25V 25V 25V 25V	C505 C506 C507 C508 C509	1-163-199-00 1-124-902-00 1-126-375-11 1-130-495-00 1-124-935-11	CERAMIC CHIP 560PF ELECT 0.47MF ELECT 100MF MYLAR 0.1MF ELECT 470MF	5% 20% 20% 5% 20%	50V 50V 25V 50V 100V
C441 C442 C443	1-126-962-11 1-163-809-11 1-163-243-11	ELECT 3.3MF CERAMIC CHIP 0.047MF CERAMIC CHIP 47PF	20% 10% 5%	50V 25V 50V	C511 C512	1-108-700-11 1-124-902-00	MYLAR 0.047MF ELECT 0.47MF	10% 20%	200V 50V

The components identified by shading and mark  $\Delta$  are critical for safety.

Replace only with part number specified.

Les composants identifies par une trame et une marque A sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.



REF.NO. PART NO.	DESCRIPTION			REMARK	REF.NO.	PART NO.	DESCRIPTION			REMARK
C513 1-126-096-11	ELECT	10MF	20%	25V	C586	1-124-557-11	ELECT	1000MF	20%	25V
C514 1-129-718-00 C515 1-163-809-11 C516 1-102-030-00 C517 1-163-024-00	FILM CERAMIC CHIP CERAMIC CERAMIC CHIP	330PF 0.018MF	10% 10% 10% 10%	630V 25V 500V 50V	C587 C588 C589 C590	1-102-030-00 1-124-667-11 1-102-030-00 1-126-387-11	CERAMIC ELECT CERAMIC ELECT	330PF 10MF 330PF 2.2MF	10% 20% 10% 20%	500V 50V 500V 50V 200V
C518 1-107-995-11 C519 1-163-017-00 C520 1-163-257-11 C521 1-162-114-00 C522 1-124-360-00	ELECT CERAMIC CHIP CERAMIC CHIP CERAMIC ELECT		0 10% 5% 20%	160V 50V 50V 2KV 16V	C591 C592 C593 C594 C595	1-106-371-00 1-123-932-00 1-165-319-11 1-163-229-11 1-126-336-11	MYLAR ELECT CERAMIC CHIP CERAMIC CHIP ELECT	0.015MF 4.7MF 0.1MF 12PF 220MF	10% 20% 5% 20%	160V 50V 50V 25V
C523 1-126-801-11 C525 A 1-136-545-11 C526 A 1-162-116-91 C529 1-104-797-11 C530 1-124-120-11	ELECT FILM CERAMIC ELECT ELECT	1MF 0.0078MF 680PF 0.47MF 220MF	20% 3% 10% 20% 20%	50 V 2K V 2K V 50 V 25 V	C596 C597 C598 C599	1-124-478-11 1-164-346-11 1-164-346-11 1-126-157-11 1-124-477-11	CERAMIC CHIP CERAMIC CHIP ELECT ELECT	100MF 1MF 1MF 10MF 47MF	20% 20% 20%	25V 16V 16V 16V 25V
C531 1-124-477-11 C532 1-163-031-11	ELECT CERAMIC CHIP	47MF 0.01MF	20%	25V 50V	C1302	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C533 1-102-212-00 C534 1-123-948-00 C537 1-124-913-11	CERAMIC ELECT ELECT	820PF 22MF 470MF	10% 20% 20%	500V 250V 50V	C1304 C1305 C1306 C1307	1-124-477-11 1-124-477-11 1-163-031-11 1-163-031-11	ELECT ELECT CERAMIC CHIP CERAMIC CHIP	0.01MF	20% 20% 20%	25V 25V 50V 50V 10V
C538 1-106-367-00 C539 1-130-480-00 C540 1-163-133-00	MYLAR FILM CERAMIC CHIP	0.01MF 0.0056MF 470PF	10% 5% 5%	100V 50V 50V	C1308	1-124-443-00 1-163-257-11	CERAMIC CHIP	100MF 180PF	20% 5%	50V
C541 1-124-927-11 C542 1-106-351-00 C543 1-106-351-00	ELECT MYLAR MYLAR	4.7MF 0.0022MF 0.0022MF	20% 10%	50V 100V 100V	C1310	1-163-031-11 1-124-477-11 1-163-031-11 1-163-031-11	CERAMIC CHIP ELECT CERAMIC CHIP CERAMIC CHIP	0.01MF 47MF 0.01MF	20%	50V 25V 50V 50V
C544 1-106-367-00 C545 1-102-212-00 C546 1-163-119-00 C547 1-163-251-11	MYLAR CERAMIC CERAMIC CHIP CERAMIC CHIP	0.01MF 820PF 120PF	10% 10% 5% 5%	100V 500V 50V 50V	C1314 C1315	1-124-477-11 1-124-477-11 1-163-031-11 1-124-477-11	ELECT ELECT CERAMIC CHIP ELECT	47MF	20% 20% 20%	25V 25V 50V 25V
C548 1-102-212-00 C549 1-124-667-11 C550 1-126-163-11	CERAMIC ELECT ELECT	820PF 10MF 4.7MF	10% 20% 20%	500V 50V 50V	C1318	1-124-477-11 1-124-477-11	ELECT	47MF	20% 20%	25V 25V
C551 1-106-375-12 C552 1-126-336-11	MYLAR ELECT	0.022MF 220MF 0.01MF	10% 20% 5%	100 V 25 V 50 V	C1320 C1321 C1322 C1323	1-124-477-11 1-124-477-11 1-124-120-11 1-163-031-11	ELECT ELECT ELECT CERAMIC CHIP	47MF 47MF 220MF	20% 20% 20% 20%	25V 25V 16V 50V
C554 1-130-736-11 C555 1-124-907-11 C556 1-124-907-11 C557 1-106-381-12 C558 1-124-903-11	FILM ELECT ELECT MYLAR ELECT	10MF 10MF 10MF 0.039MF 1MF	20% 20% 10% 20%	50V 50V 100V 50V	C1324 C1325	1-163-031-11	CERAMIC CHIP CERAMIC CHIP ELECT CERAMIC CHIP	0.01MF 0.01MF 47MF 0.01MF	20%	50V 50V 25V 50V
C559 1-136-173-00 C561 1-136-159-00	FILM	0.47MF 0.033MF	5% 5% 5%	50V 50V 50V	C1328	1-163-031-11 1-124-907-11	CERAMIC CHIP	0.01MF 10MF	20%	50V 50V
C562 1-163-249-11 C564 1-124-907-11 C565 1-124-903-11	ELECT ELECT	10MF 1MF	20% 20% 10%	50V 50V 50V	C1330	1-163-031-11 1-124-477-11 1-124-477-11 1-124-477-11	CERAMIC CHIP	0.01MF 47MF 47MF 47MF	20% 20% 20%	50V 25V 25V 25V
C566 1-106-367-00 C567 1-136-499-11 C568 1-124-903-11 C569 1-131-351-00 C570 1-124-360-00	MYLAR FILM ELECT TANTALUM ELECT	0.01MF 0.047MF 1MF 4.7MF 1000MF	5% 20% 10% 20%	50V 50V 25V 16V	C1334 C1335 C1336 C1338	1-163-227-11 1-124-477-11 1-124-477-11 1-163-031-11	CERAMIC CHIP ELECT ELECT CERAMIC CHIP	10PF 47MF 47MF 0.01MF	0.5PF 20% 20%	50V 25V 25V 50V
C571 1-164-232-11 C572 1-104-709-11 C573 1-136-173-00 C575 1-163-031-11 C576 1-102-244-00	CERAMIC CHIP ELECT FILM CERAMIC CHIP CERAMIC	4.7MF 0.47MF	10% 0 5% 10%	50V 160V 50V 50V 500V	C1339 C1340 C1341 C1342	1-163-031-11 1-163-031-11 1-163-275-11 1-163-105-00	CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP	0.01MF 0.001MF 33PF	5% 5%	50 V 50 V 50 V 50 V
C577 1-124-907-11 C578 1-136-540-11	ELECT FILM	10MF 0.82MF	20% 5%	50V 200V	C1343 C1344	1-163-113-00 1-163-083-00	CERAMIC CHIP CERAMIC CHIP	1PF	5% 0.25PF	50V 50V
C578 1-136-340-11 C579 1-126-804-11 C580 1-136-756-11 C581 1-124-927-11	ELECT FILM ELECT	100MF 0.24MF 4.7MF	20% 5% 20%	50V 200V 50V	C1345 C1346 C1347 C1348	1-124-907-11 1-124-477-11 1-163-031-11 1-163-127-00	ELECT ELECT CERAMIC CHIP CERAMIC CHIP	10MF 47MF 0.01MF 270PF	20% 20%	50V 25V 50V 50V
C582 1-102-002-00 C583 1-136-569-11	CERAMIC FILM	680PF 1.2MF	10% 5%	500V 200V	C1349	1-163-117-00	CERAMIC CHIP	100PF	5% 5%	50V
C584 1-123-267-00 C585 1-124-666-11	ELECT ELECT	2.2MF 4.7MF	20% 20%	160V 250V	C1350	1-164-232-11 1-124-903-11	CERAMIC CHIP ELECT	0.01MF 1MF	10% 20%	50V 50V



REF.NO.	PART NO.	DESCRIPTION		REMARK	REF.NO. PART NO. DESCRIPTION	REMARK
C1352 C1353 C1354 C1355 C1356	1-163-023-00 1-163-031-11 1-163-121-00 1-163-125-00 1-163-235-11	CERAMIC CHIP 0.015MF CERAMIC CHIP 0.01MF CERAMIC CHIP 150PF CERAMIC CHIP 220PF CERAMIC CHIP 22PF	10% 5% 5% 5%	50 V 50 V 50 V 50 V 50 V	<pre></pre>	
C1357 C1358 C1359 C1360	1-124-119-00	ELECT 330MF ELECT 47MF CERAMIC CHIP 330PF CERAMIC CHIP 0.0022MF	20% 20% 5% 10%	16V 25V 50V 50V	CN104 *1-564-506-11 PLUG, CONNECTOR 3P CN105 *1-565-503-11 CONNECTOR, BOARD TO BOARD 12F CN201 *1-564-506-11 PLUG, CONNECTOR 3P CN301 *1-564-514-11 PLUG, CONNECTOR 11P	<b>,</b>
C1362 C1363 C1364	1-163-249-11 1-163-235-11 1-163-133-00	CERAMIC CHIP 82PF	5%	50V 50V 50V	CN302 *1-564-510-11 PLUG, CONNECTOR 7P CN303 *1-564-515-11 PLUG, CONNECTOR 12P CN304 *1-564-509-11 PLUG, CONNECTOR 6P CN305 *1-565-504-11 CONNECTOR, BOARD TO BOARD 13F	
C1365 C1366 C1367	1-163-227-11 1-124-477-11 1-124-477-11		5% 5% 0.5PF 20% 20%	50 V 25 V 25 V	CN306 1-564-505-11 PLUG, CONNECTOR 2P CN401 *1-564-511-11 PLUG, CONNECTOR 8P CN402 *1-564-515-11 PLUG, CONNECTOR 12P	
C1373 C1374 C1375	1-124-477-11 1-124-927-11	ELECT 47MF ELECT 47MF ELECT 47MF ELECT 4.7MF CERAMIC CHIP 15PF	20% 20% 20% 20% 5%	25V 25V 25V 50V	CN501 *1-580-798-11 CONNECTOR PIN (DY) 6P CN502 *1-573-964-11 PIN, CONNECTOR (PC BOARD) 6P CN503 *1-573-964-11 PIN, CONNECTOR (PC BOARD) 6P CN504 *1-564-508-11 PLUG, CONNECTOR 5P	
C1378 C1382 C1384 C1385	1-163-097-00 1-124-443-00 1-163-038-91 1-163-031-11		20%	50 V 10 V 25 V 50 V	CN505 *1-564-506-11 PLUG, CONNECTOR 3P CN507 *1-535-419-00 TAB, FASTEN (PCB)	
C1386 C1387	1-163-031-11 1-163-031-11	CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF		50V 50V	<composition block="" circuit=""></composition>	
C1392 C1394 C1395	1-164-222-11 1-124-234-00 1-124-477-11 1-124-477-11 1-163-275-11	CERAMIC CHIP 0.22MF ELECT 22MF ELECT 47MF ELECT 47MF CERAMIC CHIP 0.001MF	20% 20% 20% 5%	25V 16V 16V 16V 50V	CP300 1-236-366-11 MODULE, TRAP CP301 1-236-365-11 MODULE, TRAP CP302 1-808-654-21 MODULE CP303 1-466-162-61 FILTER BLOCK, COM (CFB-4)	
C1397	1-163-031-11	CERAMIC CHIP 0.01MF		507	<diode></diode>	
C1399 C1400	1-124-477-11 1-124-234-00 1-163-031-11 1-136-173-00	ELECT 47MF ELECT 22MF CERAMIC CHIP 0.01MF FILM 0.47MF	20% 20% 5%	16V 16V 50V 50V	D100 8-719-404-46 D10DE MA110 D101 8-719-800-76 D10DE ISS226 D102 8-719-800-76 D10DE ISS226 D103 8-719-045-70 D10DE ISV230TPH3 D104 8-719-800-76 D10DE ISS226	
C1403 C1404 C1405	1-163-031-11 1-136-173-00 1-164-299-11 1-163-235-11 1-163-090-00	CERAMIC CHIP 0.01MF FILM 0.47MF CERAMIC CHIP 0.22MF CERAMIC CHIP 22PF CERAMIC CHIP 7PF	5% 10% 5% 0.25PF		D105 8-719-800-76 DIODE 1SS226 D106 8-719-800-76 DIODE 1SS226 D107 8-719-800-76 DIODE 1SS226 D108 8-719-104-34 DIODE 1S2836 D109 8-719-801-78 DIODE 1SS184	
C1500 C1501	1-163-085-00 1-163-113-00 1-124-556-11 1-124-472-11 1-101-821-00	CERAMIC CHIP 2PF CERAMIC CHIP 68PF ELECT 2200MF ELECT 470MF CERAMIC 0.0022MF	0.25PF 5% 20% 20%	50V 50V 16V 10V 500V	D111 8-719-977-05 DIODE DTZ6.2 D113 8-719-159-06 DIODE RD4.7SB-T2 D114 8-719-404-46 DIODE MA110 D115 8-719-977-05 DIODE MA110 D116 8-719-404-46 DIODE MA110	
C1504 C1505	1-164-004-11 1-124-907-11 1-136-165-00 1-124-119-00 1-163-141-00	CERAMIC CHIP 0.1MF ELECT 10MF FILM 0.1MF ELECT 330MF CERAMIC CHIP 0.001MF	10% 20% 5% 20% 5%	25V 50V 50V 16V 50V	D200 8-719-977-46 DIODE DTZ13C D300 8-719-025-07 DIODE 1SV232-TPH3 D301 8-719-404-46 DIODE MAI10 D302 8-719-159-06 DIODE RD4.7SB-T2 D303 8-719-977-05 DIODE DTZ6.2	
C1509 C1510 C1511	1-124-927-11 1-124-907-11 1-124-927-11 1-164-182-11 1-124-927-11	ELECT 4.7MF ELECT 10MF ELECT 4.7MF CERAMIC CHIP 0.0033MF ELECT 4.7MF	20% 20% 20% 10% 20%	50V 50V 50V 50V 50V	D304 8-719-801-78 DIODE ISS184 D305 8-719-800-76 DIODE ISS226 D306 8-719-104-34 DIODE ISS236 D307 8-719-404-46 DIODE MAI10 D308 8-719-404-46 DIODE MAI10	
C1514 C1515 C1516	1-163-197-00 1-130-477-00 1-124-907-11 1-163-063-00 1-126-101-11	CERAMIC CHIP 470PF MYLAR 0.0033MF ELECT 10MF CERAMIC CHIP 0.022MF ELECT 100MF	5% 5% 20% 10% 20%	50V 50V 50V 50V 10V	D309 8-719-404-46 DIODE MA110 D310 8-719-104-34 DIODE IS2836 D311 8-719-045-70 DIODE ISV230TPH3 D313 8-719-801-78 DIODE ISS184 D314 8-719-404-46 DIODE MA110	
	1-124-477-11 1-163-037-11 1-163-243-11	ELECT 47MF CERAMIC CHIP 0.022MF CERAMIC CHIP 47PF	20% 10% 5%	16V 25V 50V	D315 8-719-404-46 DIODE MA110 D317 8-719-404-46 DIODE MA110 D320 8-719-404-46 DIODE MA110	



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D322 D323	8-719-404-46 8-719-404-46	DIODE MA110 DIODE MA110		D521	8-719-404-46		
D324 D325 D326	8-719-404-46 8-719-801-78 8-719-404-46	DIODE MAIIO DIODE 1SS184 DIODE MAIIO		D522 D523 D524	8-719-977-05 8-719-404-46 8-719-200-02	DIODE MA110 DIODE 10E-2	
D327 D332	8-719-104-34 8-719-404-46	DIODE 1S2836 DIODE MA110		D525 D526	8-719-200-02 8-719-404-46 8-719-200-02	DIODE MA110	
D333 D335 D337	8-719-404-46 8-719-404-46 8-719-404-46	DESCRIPTION  DIODE MAIIO DIODE MAIIO DIODE MAIIO DIODE ISSI84 DIODE MAIIO DIODE MAIO DIODE SSI84 DIODE ISSI84 DIODE ISSI84 DIODE ISSI84 DIODE ISSI84 DIODE ISSI84 DIODE ISSI84 DIODE MAIIO		D527 D528 D529 D530	8-719-200-02 8-719-300-76 8-719-200-02 8-719-300-76	DIODE RH-1A DIODE 10E-2	
D338 D339 D341	8-719-404-46 8-719-404-46 8-719-159-06	DIODE MA110 DIODE MA110 DIODE RD4.7SB-T2		D531	8-719-977-32 8-719-800-76	DIODE DTZ11B DIODE 1SS226	
D344 D345	8-719-801-78 8-719-104-34	DIODE 1SS184 DIODE 1S2836		D533 D534 D535	8-719-404-46		
D346 D347 D360 D361	8-719-104-34 8-719-104-34 8-719-104-34 8-719-104-34	DIODE 152836 DIODE 152836 DIODE 152836		D536 D537 D538	8-719-800-76 8-719-800-76 8-719-800-76	DIODE 1SS226 DIODE 1SS226 DIODE 1SS226	
D362 D363	8-719-158-40 8-719-158-40	DIODE RDIOSB1 DIODE RDIOSB1		D539 D540 D541	8-719-404-46 8-719-404-46 8-719-801-78	DIODE MA110	
D364 D365 D381	8-719-104-34 8-719-404-46 8-719-404-46 8-719-404-46	DIODE 1S2836 DIODE MA110 DIODE MA110 DIODE MA110		D542 D543	8-719-404-46 8-719-911-19	DIODE MA110 DIODE 1SS119-25	
D401 D404 D405	8-719-800-76	DIOUE IMITO		1	<del< td=""><td>AY LINE&gt;</td><td></td></del<>	AY LINE>	
D405 D406 D407 D408	8-719-404-46 8-719-404-46 8-719-404-46	DIODE MA110 DIODE MA110 DIODE MA110		DL300 DL301 DL401	1-415-633-11 1-415-632-11 1-409-547-11	AY LINE> DELAY LINE, Y DELAY LINE, Y DELAY LINE	
D410 D411	8-719-404-46 8-719-404-46	DIODE MA110 DIODE MA110		1	<fil< td=""><td>TER&gt;</td><td></td></fil<>	TER>	
D414 D415 D416	8-719-801-78 8-719-801-78 8-719-801-78	DIODE 1SS184 DIODE 1SS184 DIODE 1SS184		FL300 FL401	1-236-547-11 1-236-364-11	TRAP, LC FILTER, BAND PASS	
D417 D418 D421	8-719-801-78 8-719-801-78 8-719-404-46	DIODE 1SS184 DIODE 1SS184 DIODE MA110			<10>		
D422 D423	8-719-404-46 8-719-800-76	DIODE MA110 DIODE 1SS226		IC101 IC102 IC103	8-759-287-40 8-759-280-74 8-759-008-48	IC UPD78013YCW-Y04 IC ST24C02CB1 IC MC74HC86F	
D424 D425 D426 D427	8-719-404-46 8-719-800-76 8-719-159-06 8-719-404-46	DIODE MAILO DIODE 1SS226 DIODE RD4.7SB-T2		IC104 IC105	8-759-196-70 8-759-196-70	IC UPD78013YCW-Y04 IC ST24C02CB1 IC MC74HC86F IC UPD6451AGT-632-E2 IC M62358FP-E1 IC M62358FP-E1	
D500 D501	8-719-404-46 8-719-977-03	DIODE MA110 DIODE DTZ5.6B		IC107	8-759-196-70 8-759-042-02	IC M62358FP-E1 IC S-80743AL-A7-S IC M62358FP-E1	
D502 D503 D504	8-719-979-80 8-719-404-46 8-719-901-83	DIODE UF5406 DIODE MA110 DIODE 1SS83		10111	8-759-009-22	IC M62358FP-E1 IC MC14094BF	
D505 D506	8-719-028-72	DIODE RGP02-17EL-6433 DIODE ERC06-15S		IC200 IC301 IC302 IC303	8-759-420-04 8-752-053-21 8-759-998-98 8-759-926-98	IC AN5265 IC CXA1211M IC LM358D IC SN74HC4040ANS	
	8-719-945-80 8-719-800-76						
D507 D508 D509 D510	8-719-945-80 8-719-800-76 8-719-800-76 8-719-404-46 8-719-302-43	DIODE ISS226 DIODE ISS226 DIODE MA110 DIODE EL1Z		I C304 I C305	8-759-932-67 8-759-631-08	IC BU4053BCF IC M51279FP	
D508 D509 D510 D512 D513	8-719-800-76 8-719-800-76 8-719-404-46 8-719-302-43 8-719-979-80 8-719-404-46	DIODE 1SS226 DIODE 1SS226 DIODE MA110 DIODE EL1Z  DIODE UF5406 DIODE MA110		I C304 I C305	8-759-932-67	IC BU4053BCF	
D508 D509 D510	8-719-800-76 8-719-800-76 8-719-404-46 8-719-302-43 8-719-979-80	DIODE 1SS226 DIODE 1SS226 DIODE MA110 DIODE EL1Z DIODE UF5406		I C304 I C305 I C306 I C307 I C309 I C310 I C311	8-759-932-67 8-759-631-08 8-759-711-32 8-759-509-05 8-759-711-32 8-759-932-67 8-759-008-67	IC BU4053BCF IC M51279FP IC NJM2245M IC XRU4066BCF IC NJM2245M IC BU4053BCF IC MC14066BF	
D508 D509 D510 D512 D513 D514 D515	8-719-800-76 8-719-800-76 8-719-404-46 8-719-302-43 8-719-979-80 8-719-404-46 8-719-971-20	DIODE 1SS226 DIODE 1SS226 DIODE MA110 DIODE EL17  DIODE UF5406 DIODE MA110 DIODE ERC38-06 DIODE ERC38-06		IC304 IC305 IC306 IC307 IC309 IC310 IC311 IC312 IC313 IC314	8-759-932-67 8-759-631-08 8-759-711-32 8-759-509-05 8-759-711-32	IC BU4053BCF IC M51279FP IC NJM2245M IC XRU4066BCF IC NJM2245M IC BU4053BCF IC MC14066BF IC NJM2245M IC MM1113XFF IC MM1113XFF	



The components identified by shading and mark  $ilde{\Delta}$  are critical for safety.

Replace only with part number specified.

Les composants identifies par une trame et une marque  $\Delta$  sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION		REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
IC316 IC317 IC318 IC319 IC320	8-759-084-76 8-759-009-51 8-759-009-67 8-759-509-05 8-759-287-89	IC MM1111XF IC MC14538BF IC MC14584BF IC XRU4066BCF IC MM1113XFF			L406 L407 L408 L409 L500	1-408-419-00 1-408-413-00 1-408-413-00 1-410-214-31 1-459-155-00	INDUCTOR 22UH	
IC321 IC322 IC323 IC324 IC325	8-759-287-89 8-759-287-89 8-759-287-89 8-759-287-89 8-759-287-89	IC MM1113XFF IC MM1113XFF IC MM1113XFF IC MM1113XFF IC MM1113XFF			L501 L502 L503 L504 L505	1-407-365-00 1-407-365-00 1-410-093-11 1-410-666-31 1-410-671-31	COIL, CHOKE INDUCTOR 33MMH INDUCTOR 18UH	
IC326 IC327 IC350 IC401 IC402	8-759-060-00 8-759-084-76 8-759-100-96 8-759-196-69 8-752-053-21	IC BA10324AF IC MM1111XF IC UPC4558G2 IC BA7655AF-E2 IC CXA1211M			L507 L508 L509 L511 L512 ▲	1-410-686-11 1-412-530-31 1-459-075-11 1-459-106-00 .1-459-155-11	INDUCTOR 27UH COIL.DYNAMIC CONVERSION CHOKE	
IC403 IC404 IC405 IC406 IC407	8-759-008-67 8-752-052-62 8-759-932-67 8-759-998-98 8-759-008-67	IC MC14066BF IC CXA1478S IC BU4053BCF IC LM358D IC MC14066BF			1 L516 A	1-459-104-00 1-459-059-00 1-459-760-13	INDUCTOR 3.9MMH COIL, DUST CORE COIL, DUST CORE COIL, HORIZONTAL LINEARITY INDUCTOR 680UH	
IC408 IC409		IC XRA10393F IC BA10324AF				<neo< td=""><td>N LAMP&gt;</td><td></td></neo<>	N LAMP>	
IC411	8-759-009-06 8-759-008-92 8-759-932-67	IC MC14052BF IC MC14024BF IC BU4053BCF			NL500	1-519-526-11	LAMP, NEON	
IC413 IC500		IC BU4053BCF IC H8D7248				<tra< td=""><td>NSISTOR&gt;</td><td>= 1</td></tra<>	NSISTOR>	= 1
I C502 I C503 I C504	8-759-009-51 8-759-009-51 8-752-053-21	IC MC14538BF IC MC14538BF IC CXA1211M			Q101 Q102 Q103 Q104	8-729-216-22 8-729-216-22 8-729-907-26	TRANSISTOR DTC144EK TRANSISTOR 2SA1162-G TRANSISTOR 2SA1162-G TRANSISTOR IMX1	
I C505 I C506 I C507 I C508 I C509	8-759-520-07 8-759-009-51 8-759-100-60 8-752-053-21 8-759-998-98	IC XKAI/8121 IC MC14538BF IC UPC1377C IC CXA1211M IC LM358D			Q105 Q107 Q108 Q109 Q110	8-729-901-06 8-729-901-06 8-729-422-29 8-729-422-29 8-729-422-29	TRANSISTOR DTA144EK  TRANSISTOR DTA144EK  TRANSISTOR 2SD601A  TRANSISTOR 2SD601A  TRANSISTOR 2SD601A	
10510	8-759-009-51	IC MC14538BF			Q111	8-729-901-06	TRANSISTOR DTA144EK	
•	<con< td=""><td>DCTOR CHIP&gt;</td><td></td><td></td><td>Q112 Q113 Q114</td><td>8-729-422-29 8-729-422-29 8-729-120-28</td><td>TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SC1623-L5L6</td><td></td></con<>	DCTOR CHIP>			Q112 Q113 Q114	8-729-422-29 8-729-422-29 8-729-120-28	TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SC1623-L5L6	
JR302	1-216-295-91	CONDCTOR, CHIP			Q115 Q200	8-729-120-28 8-729-140-96	TRANSISTOR 2SC1623-L5L6 TRANSISTOR 2SD774-34	
	<01	L>			Q201 Q300	8-729-422-29 8-729-422-29	TRANSISTOR 2SD601A TRANSISTOR 2SD601A	
L101 L102 L104 L105	1-408-609-41 1-408-417-00 1-408-425-00 1-410-482-31	INDUCTOR INDUCTOR INDUCTOR	33UH 47UH 22OUH 10OUH		Q301 Q302 Q303	8-729-422-29 8-729-422-37 8-729-422-29	TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R TRANSISTOR 2SD601A	
L300 L305 L308 L309	1-410-478-11 1-410-196-11 1-410-466-41 1-410-470-11	INDUCTOR INDUCTOR CHIP INDUCTOR INDUCTOR	47UH 2.2UH 4.7UH 10UH		Q305 Q306 Q307 Q308 Q309	8-729-422-29 8-729-422-29 8-729-422-29 8-729-422-29 8-729-422-37	TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R	
L311 L312	1-410-470-11 1-412-011-31	INDUCTOR INDUCTOR CHIP	10UH 27UH		Q310 Q311	8-729-422-37 8-729-422-37	TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R	
L314 L316 L317 L319	1-412-011-31 1-412-011-31 1-410-090-41 1-408-421-00	INDUCTOR CHIP INDUCTOR CHIP INDUCTOR INDUCTOR	27UH 27UH 18MMH 100UH		Q311 Q312 Q313 Q314	8-729-422-29 8-729-422-37 8-729-901-06	TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R TRANSISTOR DTA144EK	
L320 L401	1-410-682-31 1-410-478-11	INDUCTOR INDUCTOR	470UH 47UH		Q315 Q316 Q318	8-729-422-37 8-729-422-29 8-729-422-37	TRANSISTOR 2SB709A-R TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R	
L402 L403	1-410-216-31 1-410-216-31	INDUCTOR CHIP INDUCTOR CHIP	100UH 100UH		0319 0320	8-729-422-29 8-729-120-28	TRANSISTOR 2SD601A TRANSISTOR 2SC1623-L5L6	
L404 L405	1-410-216-31 1-408-419-00	INDUCTOR CHIP INDUCTOR	100UH 68UH		Q321 Q322	8-729-422-29 8-729-422-29	TRANSISTOR 2SD601A TRANSISTOR 2SD601A	



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION		REMARK
Q323 Q324	8-729-901-01 8-729-901-01	TRANSISTOR DTC144EK TRANSISTOR DTC144EK		Q417	8-729-422-37	TRANSISTOR 25	SB709A-R	
Q325 Q326 Q327	8-729-422-29 8-729-422-29 8-729-422-37	TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R		Q418 Q419 Q420 Q421	8-729-120-28 8-729-422-37 8-729-422-37 8-729-901-01	TRANSISTOR 29 TRANSISTOR 29 TRANSISTOR 29 TRANSISTOR D	SC1623-L5L6 SB709A-R SB709A-R TC144EK	
Q328 Q329 Q330	8-729-141-53 8-729-141-53 8-729-422-37	TRANSISTOR 2SK94-X2X3X4 TRANSISTOR 2SK94-X2X3X4 TRANSISTOR 2SB709A-R		Q422 Q423	8-729-120-28 8-729-422-29	TRANSISTOR 25	SC1623-L5L6 SD601A	
0331 0332	8-729-422-37 8-729-901-01	TRANSISTOR 2SB709A-R TRANSISTOR DTC144EK		Q424 Q425 Q426	8-729-901-01 8-729-901-01 8-729-901-01	TRANSISTOR DOTTRANSISTOR DOTTRANSISTOR DOTTRANSISTOR DOTTRANSISTOR	TC144EK TC144EK TC144EK	
Q333 Q335 Q338 Q339 Q341	8-729-422-29 8-729-422-29 8-729-422-29 8-729-422-37 8-729-920-39	TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R TRANSISTOR IMT1US		Q429 Q430 Q431	8-729-422-37 8-729-422-37 8-729-422-29 8-729-422-29	TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25	SB709A-R SB709A-R SD601A SD601A	
Q342 Q343	8-729-920-39 8-729-920-39	TRANSISTOR IMT1US TRANSISTOR IMT1US		Q433	8-729-901-01	TRANSISTOR DI	TC144EK	
Q345 Q350 Q351 Q352	8-729-422-29 8-729-422-37 8-729-422-29	TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R TRANSISTOR 2SD601A TRANSISTOR 2SD601A		Q434 Q435 Q436 Q437	8-729-422-29 8-729-901-01 8-729-901-01 8-729-901-01 8-729-422-29	TRANSISTOR 29 TRANSISTOR D7 TRANSISTOR D7 TRANSISTOR D7 TRANSISTOR 29	SD601A TC144EK TC144EK TC144EK SD601A	
Q353 Q354 Q355	8-729-422-29 8-729-422-29 8-729-422-29	TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SD601A		Q439 Q440	8-729-216-22 8-729-422-29	TRANSISTOR 25	SA1162-G SD601A	
Q356 Q357	8-729-901-01 8-729-422-29	TRANSISTOR DTC144EK TRANSISTOR 2SD601A		Q441 Q442 Q443	8-729-141-53 8-729-422-29 8-729-216-22	TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25	SK94-X2X3X4 SD601A SA1162-G	
Q358 Q359 Q360 Q361	8-729-422-29 8-729-422-37 8-729-907-26 8-729-901-06	TRANSISTOR DTC144EK TRANSISTOR DTC144EK TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R TRANSISTOR 2SK94-X2X3X4 TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR 1MT1US TRANSISTOR 1MT1US TRANSISTOR 1MT1US TRANSISTOR 2SD601A TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R TRANSISTOR DTC144EK		Q444 Q445 Q500 Q501	8-729-422-29 8-729-901-01 8-729-422-37 8-729-821-87	TRANSISTOR 29 TRANSISTOR 29 TRANSISTOR 29 TRANSISTOR 29	SD601A TC144EK SB709A-R SD1878-CA	
Q362 Q363 Q364	8-729-422-29 8-729-422-29 8-729-901-01	TRANSISTOR 2SD601A TRANSISTOR 2SD601A TRANSISTOR DTC144EK		Q502 Q503	8-729-119-80 8-729-313-42	TRANSISTOR 25	SC2688-LK SD1134-C	
Q366 Q367	8-729-422-37 8-729-422-37	TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R		Q505 Q506 Q507	8-729-422-29 8-729-422-29 8-729-422-29	TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25	SD601A SD601A SD601A	
Q368 Q369 Q372	8-729-422-37 8-729-901-06 8-729-901-01	TRANSISTOR 2SB709A-R TRANSISTOR DTA144EK TRANSISTOR DTC144EK		Q509	8-729-422-37 8-729-901-06	TRANSISTOR DT TRANSISTOR DT	TA144EK	
Q376 Q377 Q378	8-729-901-06	TRANSISTOR DTC144EK TRANSISTOR DTA144EK TRANSISTOR DTC144EK		Q510 Q511 Q512 Q513	8-729-422-29	TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25	SC2958-L	
Q380 Q381 Q382	8-729-901-01 8-729-901-01 8-729-901-01	TRANSISTOR DTC144EK TRANSISTOR DTC144EK TRANSISTOR DTC144EK TRANSISTOR DTC144EK		Q514 Q515		TRANSISTOR DI	TC124EK	
Q383	8-729-901-01 8-729-901-01	TRANSISTOR DTC144EK TRANSISTOR DTC144EK		Q517 Q518 Q519	8-729-901-06 8-729-901-01 8-729-901-01	TRANSISTOR DOTRANSISTOR DOTRANSISTOR DO	TA144EK TC144EK	
Q384 Q385 Q386 Q401	8-729-901-01 8-729-901-01 8-729-422-29	TRANSISTOR DTC144EK TRANSISTOR DTC144EK TRANSISTOR 2SD601A TRANSISTOR 2SD601A		Q520 Q522 Q523	8-729-021-82 8-729-422-29 8-729-422-29	TRANSISTOR 25 TRANSISTOR 25 TRANSISTOR 25	SD601A	
Q402 Q403	8-729-422-29 8-729-901-01	TRANSISTOR DTC144EK TRANSISTOR 2SB709A-R		Q524 Q525	8-729-119-78 8-729-119-76	TRANSISTOR 25 TRANSISTOR 25	SC2785-HFE	
Q404 Q405 Q406 Q407	8-729-422-37 8-729-422-37 8-729-422-29 8-729-422-29	TRANSISTOR 2SB709A-R TRANSISTOR 2SB601A TRANSISTOR 2SD601A		Q526 Q527	8-729-422-37 8-729-422-29	TRANSISTOR 25		
Q408 Q409	8-729-422-37 8-729-422-37	TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R				ISTOR>	100 5%	1 (10)
Q410 Q411 Q412	8-729-907-26 8-729-422-29 8-729-216-22	TRANSISTOR IMX1 TRANSISTOR 2SD601A TRANSISTOR 2SA1162-G		R101 R102 R103	1-216-025-91 1-216-025-91 1-216-025-91	METAL GLAZE METAL GLAZE METAL GLAZE	100 5% 100 5% 100 5% 10K 5%	1/10W 1/10W 1/10W
Q413 Q414	8-729-141-53 8-729-422-37	TRANSISTOR 25K94-X2X3X4 TRANSISTOR 25B709A-R		R104 R105	1-216-073-00 1-216-059-00	METAL GLAZE	2.7K 5%	1/10W 1/10W
Q415 Q416	8-729-422-37 8-729-422-37	TRANSISTOR 2SB709A-R TRANSISTOR 2SB709A-R		R106 R107	1-216-065-00 1-216-065-00	METAL GLAZE METAL GLAZE	4.7K 5% 4.7K 5%	1/10W 1/10W



REF.NO.	PART NO.	DESCRIPTION				REMARK	REF.NO.	PART NO.	DESCRIPTION				REMARK
R108 R109 R110 R113 R116	1-216-065-00 1-216-065-00 1-216-073-00 1-216-085-00 1-218-761-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP	4.7K 4.7K 10K 33K 240K	5% 5% 5% 5% 0.50%	1/10W 1/10W 1/10W 1/10W 1/10W		R308 R311 R312 R313 R314	1-216-065-00 1-216-055-00 1-216-073-00 1-216-649-11 1-216-099-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP METAL GLAZE	4.7K 1.8K 10K 820 120K	5% 5% 0.50%	1/10W 1/10W 1/10W 1/10W 1/10W	
R117 R119 R124 R130 R132	1-216-295-91 1-216-099-00 1-216-065-00	METAL GLAZE METAL GLAZE CONDCTOR, CHI METAL GLAZE METAL GLAZE	P 120K 4.7K	5% 5%	1/10W 1/10W 1/10W 1/10W		R315 R316 R317 R318 R320	1-216-099-00 1-216-049-91 1-216-057-00 1-216-049-91 1-216-057-00 1-216-051-00	METAL GLAZE	120K 1K 2.2K 1K 2.2K 1.2K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W 1/10W	
R133 R134 R135 R137 R140	1-216-065-00 1-216-085-00 1-216-065-00 1-216-033-00	METAL GLAZE METAL GLAZE METAL GLAZE	56K 4.7K 33K 4.7K 220	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R322 R323 R324 R325 R326	1-216-031-00 1-216-035-00 1-216-109-00 1-216-101-00 1-216-037-00 1-216-033-00		270 330K 150K 330 220	5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R144 R149 R151 R154	1-216-295-91 1-216-065-00 1-216-061-00 1-216-065-00	CONDCTOR, CHI METAL GLAZE METAL GLAZE METAL GLAZE	P 4.7K 3.3K 4.7K 27K 4.7K	5% 5% 5%	1/10W 1/10W 1/10W		R328 R329 R330 R331 R332	1-216-121-00 1-216-055-00 1-216-089-00 1-216-093-00 1-216-097-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	1M 1.8K 47K 68K 100K	5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R157 R158 R159 R160	1-216-295-91 1-216-063-00 1-216-061-00	CONDCTOR, CHI METAL GLAZE METAL GLAZE METAL GLAZE	P 3.9K 3.3K	5% 5%	1/10W 1/10W 1/10W 1/10W		R333 R334 R335 R336 R342	1-216-097-00 1-216-093-00 1-216-083-00 1-216-065-00 1-216-065-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	100K 68K 27K 4.7K 4.7K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R162 R163 R164 R165	1-216-065-00	METAL GLAZE METAL GLAZE METAL GLAZE CONDCTOR, CHI METAL GLAZE			1/10W 1/10W 1/10W		1 R349	1-216-063-00 1-216-057-00 1-216-694-11 1-216-085-00 1-216-061-00	METAL GLAZE METAL GLAZE METAL CHIP METAL GLAZE METAL GLAZE	3.9K 2.2K 62K 33K 3.3K	0.50%	1/10W 1/10W 1/10W 1/10W 1/10W	
R168 R169 R171 R172	1-216-085-00 1-216-107-00	METAL GLAZE METAL GLAZE METAL GLAZE CONDCTOR, CHI METAL GLAZE	P	5% 5% 5%	1/10W 1/10W 1/10W		R354 R357	1-216-123-11 1-216-121-00 1-216-065-00 1-216-025-91 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	1.2M 1M 4.7K 100 10K	5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R177 R178 R181 R184	1-216-065-00 1-216-089-00 1-216-065-00 1-216-649-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP	47K 4.7K 820	5% 5% 0.50%			R373 R374	1-216-645-11 1-216-647-11 1-216-073-00 1-216-111-00 1-216-114-00	METAL CHIP METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE	560 680	0.50% 0.50% 5%	1/10W	
R185 R187 R189 R190 R192	1-216-061-00 1-216-073-00 1-216-049-91 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE	10K 3.3K 10K 1K 10K	5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R379 R380 R381 R382	1-216-067-00 1-216-065-00 1-216-689-11 1-216-101-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	5.6K 4.7K 39K 150K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W	
R195 R197 R199 R200 R201	1-216-071-00 1-216-061-00 1-216-295-91 1-208-817-11 1-216-049-91	METAL GLAZE METAL GLAZE CONDCTOR, CHI METAL CHIP METAL GLAZE	30K 1K	5%	1/10W 1/10W 1/10W 1/10W	_	R386 R387 R388 R389 R390	1-216-091-00 1-216-029-00 1-216-039-00 1-216-649-11 1-249-393-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP CARBON	56K 150 390 820 10	5%	1/10W 1/10W 1/10W 1/10W 1/4W	F
R202 R203 R204 R205 R206	1-212-857-00 1-260-095-11 1-260-072-11 1-216-647-11 1-216-073-00	FUSIBLE CARBON CARBON METAL CHIP METAL GLAZE	10 470 4.7 680 10K	5%	1/4W 1/2W 1/2W 1/10W 1/10W	r	R393 R394 R395 R397 R398	1-216-073-00 1-216-083-00 1-216-651-11 1-216-113-00 1-216-105-91	METAL GLAZE METAL GLAZE METAL CHIP METAL GLAZE METAL GLAZE	10K 27K 1K 470K 220K	5% 5% 0.50% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R207 R208 R209 R210 R211	1-216-065-00 1-216-065-00 1-216-073-00 1-216-061-00 1-249-393-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE CARBON	4.7K 4.7K 10K 3.3K 10	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	F	R399 R400 R401 R402 R403	1-216-111-00 1-216-113-00 1-216-053-00 1-216-053-00 1-216-069-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	390K 470K 1.5K 1.5K 6.8K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R237 R302 R304 R307	1-216-089-00 1-216-025-91 1-216-025-91 1-216-115-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	47K 100 100 560K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W		R404 R406 R407	1-216-029-00 1-216-083-00 1-216-085-00	METAL GLAZE METAL GLAZE METAL GLAZE	150 27K 33K	5% 5% 5%	1/10W 1/10W 1/10W	

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REF.NO.	PART NO.	DESCRIPTION		-		REMARK	REF.NO.	PART NO.	DESCRIPTION				REMARK
R408 R410	1-216-689-11 1-216-069-00	METAL CHIP METAL GLAZE	39K 6.8K 220	0.50%	1/10W 1/10W 1/10W		R480	1-216-077-00 1-216-033-00	METAL GLAZE METAL GLAZE	15K 220	5% 5%	1/10W	
R411 R412 R413	1-216-033-00 1-216-089-00 1-208-799-11	METAL GLAZE METAL GLAZE METAL CHIP	47K 5.1K	5%	1/10W		R482 R483 R484	1-216-057-00 1-216-025-91 1-216-651-11	METAL GLAZE METAL GLAZE METAL CHIP	2.2K 100 1K	5% 5% 0.50%	1/10W 1/10W 1/10W	
R416 R417 R418	1-216-113-00 1-216-665-11 1-216-667-11	METAL GLAZE METAL CHIP METAL CHIP	470K 3.9K 4.7K	5% 0.50% 0.50%	1/10W 1/10W			1-216-033-00 1-208-812-11	METAL CHIP	220 18K	5% 0.50%	1/10W	
R419 R420	1-216-065-00 1-216-689-11	METAL GLAZE METAL GLAZE	4.7K 39K	5%	1/10W 1/10W		R487 R488 R489	1-208-784-11 1-216-073-00 1-216-077-00 1-216-057-00	METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE	1.2K 10K 15K 2.2K	0.50% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W	
R422 R423 R424	1-216-073-00 1-216-073-00 1-216-033-00 1-216-049-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	10K 10K 220 1K	5% 5%	1/10W 1/10W 1/10W 1/10W		R490 R491 R492	1-216-051-00 1-216-061-00 1-216-085-00	METAL GLAZE METAL GLAZE	3.3K 33K		1/10W 1/10W	
R425 R426 R427	1-216-039-00	METAL GLAZE METAL GLAZE	390	5%	1/10W 1/10W		R493 R494 R495	1-216-295-91 1-216-085-00 1-216-651-11	CONDCTOR, CHI METAL GLAZE METAL CHIP	9 33K 1K	5% 0.50%	1/10W 1/10W	
R428 R429 R430	1-216-097-00 1-216-073-00 1-216-119-00	METAL GLAZE METAL GLAZE METAL GLAZE	10K 820K	5%	1/10W 1/10W 1/10W		R496 R497	1-216-073-00 1-208-784-11 1-216-061-00	METAL GLAZE METAL CHIP METAL GLAZE	10K 1.2K 3.3K	5% 0.50% 5%	1/10W 1/10W 1/10W	
R431 R432	1-216-097-00 1-216-089-00 1-216-109-00	METAL GLAZE METAL GLAZE METAL GLAZE	100K 47K 330K		1/10W 1/10W 1/10W		R499 R500	1-216-033-00 1-216-689-11	METAL GLAZE METAL GLAZE	220 39K	5% 5%	1/10W 1/10W	
R434 R435 R436 R437	1-216-105-91 1-216-113-00 1-216-097-00	METAL GLAZE METAL GLAZE METAL GLAZE	47K 330K 220K 470K 100K	5% 5% 5%	1/10W 1/10W 1/10W		R501 R502 R503	1-216-077-00 1-216-677-11 1-249-430-11	METAL CHIP CARBON	15K 12K 12K	5%	1/10W 1/10W 1/4W	
R438 R439	1-216-053-00 1-216-033-00	METAL GLAZE	1.5K 220	5% 5%	1/10W 1/10W		R504 R505 R506	1-216-111-00 1-216-067-00 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE	390K 5.6K 10K	5% 5%	1/10W 1/10W	
R440 R441 R442	1-216-049-91 1-216-645-11 1-216-647-11	METAL GLAZE METAL CHIP METAL CHIP	1K 560 680	5% 0.50% 0.50%			R507 R508 R509	1-216-083-00 1-216-105-91 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE	27K 220K 47K	5% 5% 5% 5%	1/10W 1/10W 1/10W	
R443 R444 R445	1-216-049-91 1-216-105-91 1-216-095-00	METAL GLAZE METAL GLAZE METAL GLAZE	1K 220K 82K	5% 5% 5%	1/10W 1/10W 1/10W		R510 R511	1-216-097-00 1-216-099-00	METAL GLAZE	100K	5 <b>%</b>	1/10W	
R447 R448	1-216-069-00 1-216-049-91	METAL GLAZE	6.8K 1K 10K	5%	1/10W 1/10W 1/10W		R512 R513 R514 R515	1-216-055-00 1-216-295-91 1-216-295-91 1-208-806-11	METAL GLAZE CONDCTOR, CHI CONDCTOR, CHI METAL CHIP	1.8K P P 10K	5% 0.50%	1/10W	
R449 R450 R451 R452	1-216-073-00 1-216-121-00 1-216-037-00 1-216-651-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP	1M 330 1K	5% 5% 5% 0.50%	1/10W 1/10W 1/10W 1/10W		R516 R517	1-216-103-91 1-214-888-00	METAL GLAZE METAL	180K 10K	5% 1%	1/10W 1/2W	
R453 R455	1-216-097-00 1-216-085-00	METAL GLAZE METAL GLAZE	100K 33K 1.5K	5%	1/10W 1/10W		R518 R519 R520	1-260-123-11 1-216-017-00 1-249-423-11	CARBON METAL GLAZE CARBON	100K 47 3.3K	5% 5% 5%	1/2W 1/10W 1/4W	F
R456 R457 R458	1-216-053-00 1-216-025-91 1-216-113-00	METAL GLAZE	1.5K 100 470K 820	5% 5% 5% 0.50%	1/10W 1/10W 1/10W		R521 R522 R523	1-216-065-00 1-260-111-11 1-215-892-11	METAL GLAZE CARBON METAL OXIDE	4.7K 10K 1K	5% 5%	1/10W 1/2W 2W	F
R459 R460 R462	1-216-649-11 1-216-295-91 1-216-651-11	METAL CHIP CONDCTOR, CHI METAL CHIP			1/10W		R523 R524 R525	1-216-093-00 1-216-069-00	METAL GLAZE METAL GLAZE	68K 6.8K	5% 5% 5%	1/10W 1/10W	
R463 R464 R465	1-216-065-00 1-216-065-00 1-216-025-91	METAL GLAZE METAL GLAZE METAL GLAZE	4.7K 4.7K 100	5% 5% 5%	1/10W 1/10W 1/10W		R526 R527 R528	1-216-089-00 1-216-089-00 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE	47K 47K 47K	5%%%%% 5555555555555555555555555555555	1/10W 1/10W 1/10W 1/10W	
R466 R467	1-216-077-00 1-216-121-00	METAL GLAZE	15K 1M 220K	5%% 5%% 5%% 5%%	1/10W 1/10W 1/10W		R529 R530	1-216-089-00 1-216-367-11 1-216-077-00	METAL GLAZE METAL OXIDE METAL GLAZE	47K 0.68 15K		1/10W 2W	F
R468 R469 R470	1-216-105-91 1-216-063-00 1-216-069-00	METAL GLAZE METAL GLAZE METAL GLAZE	3.9K 6.8K		1/10W 1/10W		R531 R532 R533 R534 R535	1-215-919-11 1-247-723-11 1-216-085-00	METAL OXIDE CARBON METAL GLAZE	15K 2.2K 6.8K 33K	5%%%%%% 5%%%%%%%%%%%%%%%%%%%%%%%%%%%%%	3W 1/4W 1/10W	
R471 R472 R473	1-216-109-00 1-216-077-00 1-216-121-00	METAL GLAZE METAL GLAZE METAL GLAZE	330K 15K 1M	5% 5% 5%	1/10W 1/10W 1/10W 1/10W		R535 R536 R537	1-249-448-11 1-216-101-00 1-216-089-00	CARBON METAL GLAZE METAL GLAZE	1.2 150K 47K	5% 5%	1/4W 1/10W 1/10W	ľ
R474 R475 R476	1-216-649-11 1-216-025-91 1-216-061-00		820 100 3.3K	5%	1/10W 1/10W		R539 R540 R541	1-216-065-00 1-216-113-00 1-249-383-11	METAL GLAZE	4.7K 470K 1.5	5% 5% 5%	1/10W 1/10W 1/10W 1/4W	
R477 R478 R479	1-216-061-00 1-216-073-00 1-216-085-00	METAL GLAZE METAL GLAZE	3.3K 10K 33K	5% 5% 5%	1/10W 1/10W 1/10W		R542 R543	1-216-057-00 1-212-883-00	METAL GLAZE	2.2K 120	5% 5%	1/10W 1/4W	F



REF.NO. PART NO.	DESCRIPTION			REMARK	REF.NO.	PART NO.	DESCRIPTION				REMARK
R544 1-216-095-00 R545 1-216-073-00 R546 1-249-425-11 R547 1-216-091-00 R548 1-216-057-00	METAL GLAZE CARBON METAL GLAZE	82K 10K 4.7K 56K 2.2K	5% 1/10W 5% 1/10W 5% 1/4W 5% 1/10W 5% 1/10W	F	R1119 R1120 R1123 R1124 R1125	1-216-694-11 1-216-089-00 1-216-071-00 1-216-113-00 1-216-049-91	METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	62K 47K 8.2K 470K 1K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R549 1-216-677-11 R550 1-216-053-00 R551 1-216-077-00 R552 1-216-033-00 R553 1-216-083-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	12K 1.5K 15K 220 27K	0.50% 1/10% 5% 1/10% 5% 1/10% 5% 1/10%		R1126 R1128 R1129 R1130 R1131	1-216-041-00 1-216-065-00 1-216-071-00 1-216-049-91 1-216-049-91	METAL CHIP  METAL GLAZE	4.7K 8.2K 1K	55 555555555	1/10W 1/10W 1/10W 1/10W 1/10W	
R554 1-216-095-00 R555 1-208-823-11 R556 1-215-899-11 R558 1-247-711-11 R559 1-216-109-00	METAL CHIP METAL OXIDE CARBON METAL GLAZE	680 330K	5% 1/4W 5% 1/10W	F	R1134 R1136 R1137	1-216-073-00 1-216-097-00 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE	8.2K 6.8K 10K 100K 10K 22K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W 1/10W	
R560 1-216-091-00 R561 1-216-049-91 R563 1-216-017-00 R564 1-216-107-00 R565 1-216-033-00	METAL GLAZE METAL GLAZE METAL GLAZE		5% 1/10% 5% 1/10% 5% 1/10%		R1139 R1140 R1141 R1142	1-216-055-00 1-208-784-11 1-216-083-00 1-208-784-11	METAL GLAZE METAL CHIP METAL GLAZE METAL CHIP	1.8K 1.2K 27K	5% 0.50% 5% 0.50% 0.50%	1/10W 1/10W 1/10W	
R567 1-216-081-00 R568 1-216-073-00 R569 1-260-114-11 R571 1-216-065-00 R572 1-216-059-00	METAL GLAZE METAL GLAZE CARBON METAL GLAZE	22K 10K 18K 4.7K	5% 1/2W 5% 1/10W		R1145 R1146 R1147	1-216-067-00 1-216-057-00 1-216-057-00	METAL GLAZE METAL GLAZE METAL GLAZE	10K 5.6K 2.2K 2.2K 4.7K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R573 1-216-071-00 R574 1-216-689-11 R575 1-249-383-11 R576 1-216-101-00 R578 1-208-824-11	METAL GLAZE METAL GLAZE CARBON METAL GLAZE METAL GLAZE	2.7K 8.2K 39K 1.5 150K	5% 1/10W 5% 1/10W 5% 1/4W 5% 1/10W 0.50% 1/10W	F	R1150 R1151 R1155 R1161 R1162	1-216-065-00 1-216-037-00 1-216-081-00 1-216-133-00 1-218-776-11 1-218-768-11 1-216-033-00 1-216-049-91 1-216-049-91 1-216-097-00 1-216-097-00 1-216-085-00 1-216-085-00 1-216-085-00 1-216-085-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP METAL CHIP		5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R580 1-216-005-91 R582 1-216-085-00 R583 1-216-039-00 R584 1-216-071-00 R585 1-216-033-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	220K 33K 390 8.2K	5% 1/10W 5% 1/10W 5% 1/10W 5% 1/10W 5% 1/10W		R1163 R1164 R1165 R1167 R1168	1-216-033-00 1-216-049-91 1-216-049-91 1-216-097-00 1-216-097-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	220 1K 1K 100K 100K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R586 1-208-817-11 R587 1-208-806-11 R588 1-216-077-00 R589 1-216-067-00 R590 1-216-081-00	METAL CHIP METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE	30K 10K 15K 5.6K	0.50% 1/10W 0.50% 1/10W 5% 1/10W 5% 1/10W		R1169 R1170 R1171 R1172 R1173	1-216-097-00 1-216-089-00 1-216-085-00 1-216-085-00 1-216-295-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE CONDCTOR, CHI	100K 47K 33K 33K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W	
R591 1-208-814-11 R592 1-247-688-11 R593 1-216-647-11 R594 1-260-104-91	METAL CHIP CARBON METAL CHIP CARBON	22K 10	5% 1/4W 0.50% 1/10W 5% 1/2W	r	R1177 R1179 R1180 R1182 R1183	1-216-071-00 1-216-041-00 1-216-089-00 1-216-131-11 1-216-071-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	8.2K 470 47K 2.7M 8.2K	5%%%%%% 5%%%%%%% 5%%%%%%%%%%%%%%%%%%%%	1/10W 1/10W 1/10W 1/10W 1/10W	
R595 1-216-689-11 R596 1-214-754-00 R597 1-249-417-11 R598 1-216-085-00 R599 1-216-645-11	METAL CARBON METAL GLAZE METAL CHIP	11K 1K 33K 560	1% 1/4W 5% 1/4W 5% 1/10W 0.50% 1/10W	F	R1184 R1185 R1186 R1187	1-216-131-11 1-216-071-00 1-216-131-11 1-216-071-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	2.7M 8.2K 2.7M 8.2K 2.7M	5%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%	1/10W 1/10W 1/10W 1/10W 1/10W	
R1103 1-216-077-00 R1104 1-216-699-11 R1105 1-216-073-00 R1106 1-216-097-00 R1107 1-216-059-00	METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE	15K 100K 10K 100K 2.7K	0.50% 1/10W 5% 1/10W 5% 1/10W 5% 1/10W		R1188 R1189 R1190 R1191 R1192	1-216-131-11 1-216-071-00 1-216-131-11 1-216-071-00 1-216-131-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	8.2K 2.7M 8.2K 2.7M 100	555555555555555555555555555555555555555	1/10W 1/10W 1/10W 1/10W 1/10W	
R1108 1-208-812-11 R1111 1-216-065-00 R1112 1-216-065-00 R1113 1-216-081-00 R1114 1-216-049-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	18K 4.7K 4.7K 22K 1K	0.50% 1/10W 5% 1/10W 5% 1/10W 5% 1/10W 5% 1/10W		R1193 R1194 R1195 R1196 R1197	1-216-025-91 1-216-085-00 1-216-025-91 1-216-085-00 1-216-025-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	33K 100 33K 100	5% 5% 5%	1/10W 1/10W 1/10W 1/10W	
R1115 1-216-049-91 R1116 1-216-677-11 R1117 1-216-069-00 R1118 1-216-113-00	METAL CHIP METAL GLAZE	1K 12K 6.8K 470K	5% 1/10W 0.50% 1/10W 5% 1/10W 5% 1/10W		R1198 R1304 R1305	1-216-085-00 1-216-689-11 1-216-033-00	METAL GLAZE METAL GLAZE METAL GLAZE	33K 39K 220	5% 5%	1/10W 1/10W 1/10W	



REF.NO.	PART NO.	DESCRIPTION				REMARK	REF.NO.	PART NO.	DESCRIPTION				REMARK	
R1307 R1308	1-216-091-00 1-216-645-11	METAL CHIP	560 56K 560	0.50% 1 5% 1 0.50% 1	/10W  /10W  /10W		R1375	1-216-645-11 1-216-647-11 1-216-055-00	METAL CHIP METAL CHIP METAL GLAZE	560 680 1.8K	0.50%	1/10W		
R1311 R1312	1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE	47K 82	5% 1 5% 1	/10W  /10W  /10W		R1378 R1379 R1380	1-216-065-00 1-216-037-00 1-216-645-11	METAL GLAZE METAL GLAZE METAL CHIP	4.7K 330 560	5%	1/10W 1/10W		
R1314 R1316 R1317	1-216-081-00 1-216-065-00 1-216-033-00	METAL GLAZE METAL GLAZE METAL GLAZE	22K 4.7K 220	5% 1 5% 1 5% 1	/10W 1/10W 1/10W		R1381 R1382 R1383 R1384	1-216-647-11 1-216-073-00 1-208-812-11 1-216-091-00	METAL CHIP METAL GLAZE METAL CHIP METAL GLAZE	680 10K 18K 56K	5% 0.50%	1/10W 1/10W 1/10W		
R1320 R1321 R1322	1-216-057-00 1-216-649-11 1-216-057-00	METAL GLAZE METAL GLAZE METAL CHIP METAL GLAZE METAL GLAZE	33K 2.2K 820 2.2K 3.3K	5% 1 5% 1 0.50% 1 5% 1	/10W  /10W  /10W  /10W		R1385 R1386 R1387 R1388	1-216-073-00 1-216-077-00 1-208-784-11 1-216-689-11	METAL GLAZE METAL CHIP METAL CHIP	10K 15K 1.2K 39K	5% 0.50% 0.50%	1/10W 1/10W 1/10W		
R1325	1-216-652-11	METAL CHIP METAL GLAZE	1.1K	0.50% 1	1/10W 1/10W		R1389 R1390	1-216-657-11 1-216-647-11	METAL CHIP METAL CHIP	1.8K 680	0.50%	1/10W 1/10W		
R1327 R1328 R1329	1-216-073-00 1-216-125-00 1-216-103-91	METAL GLAZE METAL GLAZE METAL GLAZE	10K 1.5M 180K	5% 1 5% 1 5% 1	1/10W 1/10W 1/10W		R1391 R1392 R1393 R1394	1-216-025-91 1-216-041-00 1-216-063-00 1-216-041-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	100 470 3.9K 470 8.2K	5% 5% 5%	1/10W 1/10W 1/10W		
R1331 R1332 R1333	1-210-081 00 1-208-810-11 1-216-671-11 1-216-049-91 1-216-063-00	METAL CHIP METAL CHIP METAL GLAZE METAL GLAZE	15K 6.8K 1K 3.9K	0.50% 1 0.50% 1 5% 1 5% 1	1/10W 1/10W 1/10W 1/10W		R1396 R1397 R1399	1-216-071-00 1-216-065-00 1-216-073-00 1-216-085-00	METAL GLAZE METAL GLAZE METAL GLAZE	8.2K 4.7K 10K	5% 5% 5%	1/10W 1/10W 1/10W		
R1335 R1336 R1337	1-249-401-11 1-216-095-00 1-216-061-00	CARBON METAL GLAZE METAL GLAZE	47 82K 3.3K	5% 1 5% 1 5% 1	L/4W   L/10W L/10W	F	R1401 R1402	1-216-295-91	CONDCTOR, CHI	P 1K		1/10W		
R1338 R1339	1-216-647-11 1-216-033-00	METAL CHIP METAL GLAZE	680 220	0.50% 1 5% 1	1/10W 1/10W		R1404 R1405 R1406	1-208-812-11 1-216-071-00 1-208-784-11	METAL CHIP METAL GLAZE METAL CHIP	18K 8.2K 1.2K	0.50% 5% 0.50%	1/10W 1/10W 1/10W		
R1341 R1342	1-216-033-00 1-216-083-00	METAL GLAZE METAL GLAZE	220 27K	5% 1 5% 1	1/10W 1/10W 1/10W		R1408 R1409	1-216-001-00 1-216-113-00 1-216-295-91	METAL GLAZE CONDCTOR, CHI	470K	5 <b>%</b>			
R1344 R1345	1-216-093-00 1-216-109-00	METAL GLAZE METAL GLAZE	68K		1/10W 1/10W		R1410 R1411 R1412	1-216-053-00 1-216-073-00 1-216-107-00	METAL GLAZE METAL GLAZE METAL GLAZE	1.5K 10K 270K	5% 5% 5%	1/10W 1/10W 1/10W		
	1-216-073-00 1-216-071-00 1-216-035-00	METAL GLAZE METAL GLAZE METAL GLAZE			1/10W 1/10W 1/10W 1/10W		R1413 R1414 R1415	1-216-081-00 1-216-057-00 1-216-093-00	METAL GLAZE METAL GLAZE METAL GLAZE	22K 2.2K 68K 470K	5% 5% 5% 5%	1/10W		
R1353 R1354	1-216-033-00 1-216-065-00 1-216-089-00	METAL GLAZE	47K	5% 1 5% 1 5% 1	1/10W 1/10W		R1418 R1419	1-216-033-00 1-216-025-91	METAL GLAZE METAL GLAZE	220 100	5%	1/10W 1/10W		
R1356	1-216-105-91	METAL GLAZE	220K		1/10W		R1420 R1421 R1422	1-216-649-11 1-216-085-00	METAL CHIP METAL GLAZE	820 33K	0.50% 5%	1/10W 1/10W		
R1357 R1358 R1359 R1360	1-216-101-00 1-216-071-00 1-216-099-00 1-216-065-00	METAL GLAZE METAL GLAZE METAL GLAZE	8.2K 120K 4.7K	5% 1 5% 1	1/10W 1/10W 1/10W		R1423 R1424 R1425 R1426	1-216-057-00 1-216-081-00 1-216-013-00 1-216-113-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	2.2K 22K 33 470K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W		
R1361 R1362 R1363 R1364	1-216-113-00 1-216-676-11 1-216-113-00 1-216-073-00	METAL GLAZE METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE	470K 11K 470K 10K 2.7M	0.50% 1	1/10W 1/10W 1/10W		R1428 R1429	1-208-812-11 1-216-061-00 1-208-799-11 1-216-073-00	METAL GLAZE METAL CHIP METAL GLAZE	3.3K 5.1K 10K	5% 0.50%	1/10W 1/10W 1/10W		
R1366	1-216-081-00	METAL GLAZE	22K 2.4K	5% 1	1/10W		R1431 R1432	1-216-129-00 1-216-089-00	METAL GLAZE METAL GLAZE	2.2M 47K	5%	1/10W 1/10W		
R1368 R1369 R1370	1-216-059-00 1-216-051-00 1-216-105-91	METAL GLAZE METAL GLAZE METAL GLAZE	2.7K 1.2K 220K	5% 1 5% 1 5% 1	1/10W 1/10W 1/10W		R1433 R1434 R1435 R1436	1-216-085-00 1-216-645-11 1-216-055-00 1-216-073-00	METAL GLAZE METAL CHIP METAL GLAZE METAL GLAZE	33K 560 1.8K 10K	5% 5%	1/10W 1/10W 1/10W		
R1371 R1372 R1373 R1374	1-216-113-00 1-216-089-00 1-216-063-00 1-216-101-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	470K 47K 3.9K 150K	5% 1 5% 1	1/10W 1/10W		R1438 R1438 R1439	1-216-073-00 1-216-079-00	METAL GLAZE METAL GLAZE	10K	5%	1/10W 1/10W 1/10W		
	R1306 R1307 R1308 R1309 R1311 R1312 R1313 R1314 R13136 R1317 R1322 R1322 R1322 R1322 R1322 R1322 R1323 R1322 R1323 R1333 R1334 R1335 R1336 R1337 R1340 R1341 R1342 R1343 R1344 R1345 R1346 R1347 R1348 R1349 R1350 R1361 R1362 R1366 R1367 R1368 R1369 R1360 R1361 R1366 R1367 R1368 R1369 R1370 R1369 R1370 R1371 R1372 R1373	R1307 1-216-091-00 R1308 1-216-645-11 R1309 1-216-025-91 R1311 1-216-089-00 R1312 1-216-081-00 R1313 1-216-081-00 R1314 1-216-085-00 R1316 1-216-085-00 R1317 1-216-085-00 R1320 1-216-057-00 R1321 1-216-649-11 R1322 1-216-649-11 R1322 1-216-057-00 R1324 1-216-061-00 R1325 1-216-057-00 R1327 1-216-073-00 R1328 1-216-103-91 R1330 1-216-081-00 R13329 1-216-103-91 R1330 1-216-081-00 R1331 1-208-810-11 R1332 1-216-061-11 R1333 1-216-049-91 R1334 1-216-063-00 R1335 1-249-401-11 R1336 1-216-063-00 R1337 1-216-061-00 R1338 1-216-047-11 R1339 1-216-033-00 R1341 1-216-033-00 R1342 1-216-033-00 R1343 1-216-033-00 R1344 1-216-033-00 R1345 1-216-033-00 R1346 1-216-033-00 R1347 1-216-033-00 R1348 1-216-033-00 R1349 1-216-033-00 R1341 1-216-033-00 R1345 1-216-033-00 R1346 1-216-073-00 R1347 1-216-073-00 R1348 1-216-073-00 R1349 1-216-035-00 R1351 1-216-035-00 R1361 1-216-105-91 R1353 1-216-073-00 R1364 1-216-073-00 R1365 1-216-131-01 R1366 1-216-073-00 R1367 1-216-073-00 R1367 1-216-073-00 R1368 1-216-073-00 R1369 1-216-073-00 R1361 1-216-131-01 R1362 1-216-073-00 R1363 1-216-073-00 R1364 1-216-073-00 R1365 1-216-073-00 R1367 1-216-073-00 R1367 1-216-073-00 R1368 1-216-073-00 R1369 1-216-073-00 R1369 1-216-073-00 R1361 1-216-073-00 R1361 1-216-073-00 R1363 1-216-073-00 R1364 1-216-073-00 R1367 1-216-073-00 R1368 1-216-073-00 R1369 1-216-073-00 R1369 1-216-073-00 R1369 1-216-073-00 R1369 1-216-073-00 R1369 1-216-073-00 R1370 1-216-089-00 R1371 1-216-089-00 R1373 1-216-089-00 R1373 1-216-089-00 R1373 1-216-089-00 R1373 1-216-089-00 R1373 1-216-089-00	R1306 1-216-645-11 METAL CHIP R1307 1-216-091-00 METAL GLAZE R1308 1-216-645-11 METAL CHIP R1309 1-26-025-91 METAL GLAZE R1311 1-216-089-00 METAL GLAZE R1311 1-216-089-00 METAL GLAZE R1312 1-216-023-00 METAL GLAZE R1313 1-216-097-00 METAL GLAZE R1314 1-216-081-00 METAL GLAZE R1316 1-216-085-00 METAL GLAZE R1317 1-216-085-00 METAL GLAZE R1319 1-216-085-00 METAL GLAZE R1320 1-216-057-00 METAL GLAZE R1321 1-216-649-11 METAL CHIP R1322 1-216-057-00 METAL GLAZE R1321 1-216-061-00 METAL GLAZE R1322 1-216-073-00 METAL GLAZE R1323 1-216-073-00 METAL GLAZE R1328 1-216-125-00 METAL GLAZE R1329 1-216-103-91 METAL GLAZE R1330 1-216-081-00 METAL GLAZE R1331 1-208-810-11 METAL CHIP R1332 1-216-049-91 METAL GLAZE R1331 1-208-810-11 METAL CHIP R1332 1-216-049-91 METAL GLAZE R1334 1-216-063-00 METAL GLAZE R1337 1-216-063-00 METAL GLAZE R1338 1-246-47-11 METAL CHIP R1339 1-216-033-00 METAL GLAZE R1341 1-216-033-00 METAL GLAZE R1341 1-216-033-00 METAL GLAZE R1341 1-216-033-00 METAL GLAZE R1342 1-216-033-00 METAL GLAZE R1343 1-216-033-00 METAL GLAZE R1344 1-216-033-00 METAL GLAZE R1345 1-216-033-00 METAL GLAZE R1346 1-216-033-00 METAL GLAZE R1347 1-216-033-00 METAL GLAZE R1348 1-216-033-00 METAL GLAZE R1349 1-216-033-00 METAL GLAZE R1341 1-216-033-00 METAL GLAZE R1342 1-216-033-00 METAL GLAZE R1343 1-216-033-00 METAL GLAZE R1345 1-216-033-00 METAL GLAZE R1346 1-216-033-00 METAL GLAZE R1347 1-216-033-00 METAL GLAZE R1351 1-216-033-00 METAL GLAZE R1351 1-216-033-00 METAL GLAZE R1352 1-216-073-00 METAL GLAZE R1353 1-216-065-00 METAL GLAZE R1356 1-216-073-00 METAL GLAZE R1357 1-216-033-00 METAL GLAZE R1356 1-216-073-00 METAL GLAZE R1357 1-216-033-00 METAL GLAZE R1356 1-216-033-00 METAL GLAZE R1357 1-216-033-00 METAL GLAZE R1366 1-216-099-00 METAL GLAZE R1367 1-216-039-00 METAL GLAZE R1368 1-216-099-00 METAL GLAZE R1369 1-216-099-00 METAL GLAZE R1360 1-216-089-00 METAL GLAZE R1361 1-216-089-00 METAL GLAZE R1361 1-216-089-00 METAL GLAZE R1361 1-216-089-00 METAL GLAZE R1371 1-216-089-00 METAL GLAZE R1371 1-216-089-00 METAL GLAZE R1373 1-	R1306 1-216-645-11 METAL CHIP 560 R1307 1-216-091-00 METAL GLAZE 56K R1308 1-216-645-11 METAL CHIP 560 R1309 1-216-025-91 METAL GLAZE 100 R1311 1-216-089-00 METAL GLAZE 100 R1311 1-216-089-00 METAL GLAZE 47K R1312 1-216-081-00 METAL GLAZE 100K R1314 1-216-081-00 METAL GLAZE 22K R1316 1-216-065-00 METAL GLAZE 22K R1317 1-216-033-00 METAL GLAZE 22C R1319 1-216-057-00 METAL GLAZE 22C R1319 1-216-649-11 METAL GLAZE 22C R1321 1-216-649-11 METAL GLAZE 22C R1322 1-216-057-00 METAL GLAZE 22K R1322 1-216-057-00 METAL GLAZE 22K R1322 1-216-057-00 METAL GLAZE 3.3K R1325 1-216-652-11 METAL CHIP 820 R1326 1-216-073-00 METAL GLAZE 10K R1327 1-216-073-00 METAL GLAZE 10K R1329 1-216-1073-00 METAL GLAZE 10K R1329 1-216-103-91 METAL GLAZE 10K R1330 1-216-049-10 METAL GLAZE 180K R1331 1-208-810-11 METAL CHIP 15K R1332 1-216-049-10 METAL GLAZE 180K R1333 1-216-049-10 METAL GLAZE 180K R1334 1-216-063-00 METAL GLAZE 180K R1337 1-216-061-00 METAL GLAZE 180K R1337 1-216-063-00 METAL GLAZE 22C R1341 1-216-033-00 METAL GLAZE 220 R1340 1-216-033-00 METAL GLAZE 220 R1341 1-216-033-00 METAL GLAZE 220 R1342 1-216-033-00 METAL GLAZE 220 R1343 1-216-061-00 METAL GLAZE 220 R1344 1-216-033-00 METAL GLAZE 220 R1345 1-216-033-00 METAL GLAZE 220 R1346 1-216-035-00 METAL GLAZE 220 R1347 1-216-033-00 METAL GLAZE 220 R1348 1-216-035-00 METAL GLAZE 220 R1349 1-216-035-00 METAL GLAZE 220 R1341 1-216-033-00 METAL GLAZE 220 R1345 1-216-035-00 METAL GLAZE 220 R1346 1-216-035-00 METAL GLAZE 220 R1356 1-216-035-00 METAL GLAZE 220 R1357 1-216-035-00 METAL GLAZE 220 R1350 1-216-035-00 METAL GLAZE 220 R1351 1-216-035-00 METAL GLAZE 220 R1351 1-216-035-00 METAL GLAZE 220 R1356 1-216-037-00 METAL GLAZE 220 R1357 1-216-035-00 METAL GLAZE 220 R1366 1-216-035-00 METAL GLAZE 220 R1367 1-216-035-00 METAL GLAZE 220 R1368 1-216-071-00 METAL GLAZE 220 R1369 1-216-059-00 METAL GLAZE 220 R1360 1-216-059-00 METAL GLAZE 220 R1361 1-216-059-00 METAL GLAZE 220 R1361 1-216-059-00 METAL GLAZE 220 R1362 1-216-059-00 METAL GLAZE 220 R1361 1-216-059-00 METAL GLAZE 220 R1361 1-216-	R1306 1-216-645-11 METAL CHIP 560 0.50% 181307 1-216-091-00 METAL GLAZE 56K 5% 5% 181308 1-216-645-11 METAL CHIP 560 0.50% 181309 1-216-025-91 METAL GLAZE 100 5% 181311 1-216-089-00 METAL GLAZE 47K 5% 181312 1-216-089-00 METAL GLAZE 100K 5% 181314 1-216-081-00 METAL GLAZE 22K 5% 181314 1-216-081-00 METAL GLAZE 22K 5% 181314 1-216-085-00 METAL GLAZE 22K 5% 181317 1-216-085-00 METAL GLAZE 22K 5% 181317 1-216-085-00 METAL GLAZE 22K 5% 181320 1-216-057-00 METAL GLAZE 22K 5% 181321 1-216-649-11 METAL CHIP 820 0.50% 181327 1-216-067-00 METAL GLAZE 2.2K 5% 181324 1-216-061-00 METAL GLAZE 2.2K 5% 181329 1-216-073-00 METAL GLAZE 2.2K 5% 181329 1-216-073-00 METAL GLAZE 10K 5% 181329 1-216-073-00 METAL GLAZE 10K 5% 181329 1-216-061-00 METAL GLAZE 10K 5% 181329 1-216-060-00 METAL GLAZE 10K 5% 181329 1-216-060-00 METAL GLAZE 10K 5% 181333 1-206-049-91 METAL GLAZE 10K 5% 181333 1-216-049-91 METAL GLAZE 22K 5% 181333 1-216-049-91 METAL GLAZE 3.3K 5% 181333 1-216-049-91 METAL GLAZE 3.3K 5% 181334 1-216-063-00 METAL GLAZE 22C 5% 181334 1-216-033-00 METAL GLAZE 22C 5% 181335 1-216-05-00 METAL GLAZE 22C 5% 181335 1-216-05-00 METAL GLAZE 22C 5% 181336 1-216-033-00 METAL GLAZE 22C 5% 181336 1-216-035-00 METAL GLAZE 22C 5% 181337 1-216-065-00 METAL GLAZE 22C 5% 181337 1-216-065-00 METAL GLAZE 22C 5% 181337 1-216-065-00 METAL GLAZE 22C 5% 181	R1306	R1306	R1306 1-216-645-11 METAL CHIP 560 0.50% 1/10W R1376 R1308 1-216-645-11 METAL CHIP 560 0.50% 1/10W R1376 R1308 1-216-625-91 METAL GLAZE 56% 5% 1/10W R1376 R1319 1-216-089-00 METAL GLAZE 100 50% 1/10W R1378 R1311 1-216-089-00 METAL GLAZE 100 50% 1/10W R1378 R1313 1-216-097-00 METAL GLAZE 100% 5% 1/10W R1378 R1313 1-216-097-00 METAL GLAZE 100% 5% 1/10W R1378 R1316 1-216-032-00 METAL GLAZE 22% 5% 1/10W R1388 R1316 1-216-035-00 METAL GLAZE 22% 5% 1/10W R1388 R1317 1-216-035-00 METAL GLAZE 22% 5% 1/10W R1388 R1310 1-216-035-00 METAL GLAZE 22% 5% 1/10W R1388 R1320 1-216-035-00 METAL GLAZE 2.2% 5% 1/10W R1388 R1321 1-216-649-11 METAL CHIP 820 0.50% 1/10W R1387 R1322 1-216-649-11 METAL CHIP 820 0.50% 1/10W R1387 R1322 1-216-061-00 METAL GLAZE 2.2% 5% 1/10W R1388 R1322 1-216-061-00 METAL GLAZE 10% 5% 1/10W R1388 R1322 1-216-065-00 METAL GLAZE 10% 5% 1/10W R1388 R1324 1-216-061-00 METAL GLAZE 10% 5% 1/10W R1388 R1325 1-216-061-00 METAL GLAZE 10% 5% 1/10W R1389 R1326 1-216-073-00 METAL GLAZE 10% 5% 1/10W R1398 R1331 1-208-810-11 METAL CHIP 15% 0.50% 1/10W R1398 R1331 1-208-810-11 METAL GLAZE 10% 5% 1/10W R1398 R1331 1-208-810-11 METAL GLAZE 10% 5% 1/10W R1398 R1331 1-206-03-00 METAL GLAZE 22% 5% 1/10W R1491 R1399 R1331 1-206-03-00 METAL GLAZE 22% 5% 1/10W R1491 R1399 R1331 1-206-03-00 METAL GLAZE 22% 5% 1/10W R1491 R1399 R1331 1-206-03-00 METAL GLAZE 22% 5% 1/10W R1491 R1341 1-216-03-00 METAL GLAZE	R1306   -216-694-11   METAL CHIP   560   0.50%   1/10W   R1375   1-216-645-11   R1309   1-216-645-11   METAL CHIP   560   0.50%   1/10W   R1376   1-216-647-11   R1309   1-216-089-00   METAL GLAZE   100   5%   1/10W   R1377   1-216-056-00   R1311   1-216-089-00   METAL GLAZE   20   5%   1/10W   R1378   1-216-056-00   R1312   1-216-089-00   METAL GLAZE   20   5%   1/10W   R1378   1-216-057-00   R1313   1-216-039-00   METAL GLAZE   20   5%   1/10W   R1381   1-216-647-11   R1316   1-216-059-00   METAL GLAZE   22   20   5%   1/10W   R1381   1-216-647-11   R1316   1-216-059-00   METAL GLAZE   220   5%   1/10W   R1383   1-208-812-11   R1316   1-216-059-00   METAL GLAZE   220   5%   1/10W   R1383   1-208-812-11   R1316   1-216-059-00   METAL GLAZE   220   5%   1/10W   R1383   1-208-812-11   R1320   1-216-059-00   METAL GLAZE   220   5%   1/10W   R1383   1-208-812-11   R1321   1-216-059-00   METAL GLAZE   2.28   5%   1/10W   R1383   1-208-812-11   R1322   1-216-059-00   METAL GLAZE   2.28   5%   1/10W   R1385   1-216-079-00   R1322   1-216-059-00   METAL GLAZE   2.28   5%   1/10W   R1385   1-216-079-00   R1322   1-216-059-00   METAL GLAZE   2.28   5%   1/10W   R1385   1-216-079-00   R1322   1-216-059-00   METAL GLAZE   2.28   5%   1/10W   R1385   1-216-079-00   R1322   1-216-059-00   METAL GLAZE   10X   5%   1/10W   R1387   1-208-784-11   R1325   1-216-059-10   METAL GLAZE   10X   5%   1/10W   R1387   1-208-784-11   R1329   1-216-069-00   METAL GLAZE   10X   5%   1/10W   R1399   1-216-067-11   R1329   1-216-069-00   METAL GLAZE   10X   5%   1/10W   R1399   1-216-067-10   R1330   1-216-089-00   METAL GLAZE   10X   5%   1/10W   R1399   1-216-067-10   R1330   1-216-089-00   METAL GLAZE   22X   5%   1/10W   R1399   1-216-069-00   R1333   1-216-069-00   METAL GLAZE   22X   5%   1/10W   R1399   1-216-069-00   R1333   1-216-069-00   METAL GLAZE   22X   5%   1/10W   R1399   1-216-069-00   R1333   1-216-069-00   METAL GLAZE   22X   5%   1/10W   R1491   1-216-069-00   R1333   1-216-069-00   METAL GLAZE   22X   5%   1/10W   R149	R1306 1-216-645-11 METAL CHIP 560 0.50% I/10W R1307 1-216-645-11 METAL CHIP 560 0.50% I/10W R1307 1-216-645-11 METAL CHIP 560 0.50% I/10W R1307 1-216-655-00 METAL GLAZE 56% 5% I/10W R1307 1-216-655-00 METAL GLAZE 56% 5% I/10W R1307 1-216-655-00 METAL GLAZE 50% 120 METAL GLAZE 50% 120 METAL GLAZE 50% 120 METAL GLAZE 50% 121 METAL CHIP 560 0.50% I/10W R1307 1-216-637-00 METAL GLAZE 70% 120 METAL GLAZE 70%	R1306 1-216-645-11 HETAL CHIP 560 0.50% 1/10W R1307 1-216-645-11 METAL CHIP 560 81309 1-216-645-10 METAL GLARE 566 52 1/10W R1307 1-216-650-00 METAL GLARE 568 52 1/10W R1307 1-216-650-00 METAL GLARE 568 53 1/10W R1307 1-216-650-00 METAL GLARE 680 81311 1-216-089-00 METAL GLARE 200 52 1/10W R1307 1-216-050-00 METAL GLARE 4.7% 53 1/10W R1307 1-216-050-00 METAL GLARE 4.7% 53 1/10W R1307 1-216-050-00 METAL GLARE 64.7% 53 1/10W R1307 1-216-050-00 METAL GLARE 100% 53 1/10W R1307 1-216-050-00 METAL GLARE 100% 53 1/10W R1308 1-216-050-00 METAL GLARE 100% 53 1/10W	R1306   -216-649-11   METAL CHIP   560   0.50%   1/10W   R1375   1-216-645-11   METAL CHIP   560   0.50%   1/10W   R1376   -216-649-11   METAL CHIP   680   0.50%   1/10W   R1376   -216-659-00   METAL CLAZE   47%   5%   1/10W   R1377   -216-659-00   METAL CLAZE   47%   5%   1/10W   R1378   -216-659-00   METAL CLAZE   47%   5%   1/10W   R1378   -216-659-00   METAL CLAZE   47%   5%   1/10W   R1378   -216-639-00   METAL CLAZE   47%   5%   1/10W   R1381   -216-639-00   METAL CLAZE   47%   5%   1/10W   R1381   -216-639-00   METAL CLAZE   40%   5%   1/10W   R1381   -216-649-11   METAL CHIP   500   0.50%   1/10W   R1381   -216-649-10   METAL CLAZE   500   0.50%   1/10W   R1381   -216-099-00   METAL CLAZE   500   0	R1306	R1306   -216-65-11   METAL CULP   500   0.500   7.104   R1375   1-216-65-11   METAL CULP   500   0.500   7.104   R1376   1-216-65-11   METAL CULP   500   0.500   7.104   R1376   1-216-65-11   METAL CULP   500   0.500   7.104   R1376   1-216-65-10   METAL CULP   500   0.500   7.104   R1381   7.216-65-10   METAL CULP   500   0.500   7.104   R1381   7.216-67-10   METAL CULP   500   0.500   7



 The components identified by in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used. The components identified by shading and mark  $\hat{\Lambda}$  are critical for safety.

Replace only with part number specified.

Les composants identifies par une trame et une marque  $\Delta$  sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION				REMARK	REF.NO.	PART NO.	DESCRIPTION				REMARK
R1441 R1442 R1443	1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	470 220 10K 33 2.2K	5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1507 R1508 R1509 R1510	1-216-065-00 1-216-689-11 1-216-093-00 1-216-07-00 1-216-360-11 1-216-647-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	4.7K 39K 68K 15K	5% 5%	1/10W 1/10W 1/10W 1/10W	r.
R1446 R1447	1-216-081-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	8.2K 8.2K 22K 33K 2.2K	5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1513 R1514 R1515 R1516	1-216-360-11 1-216-647-11 1-247-752-11 1-247-711-11 1-216-350-11 1-216-101-00 1-215-867-00	METAL OXIDE METAL CHIP CARBON CARBON METAL OXIDE METAL GLAZE	8.2 680 1K 680 1.2 150K	0.50% 5% 5%	1/10W 1/2W 1/4W	F F F
R1451 R1452 R1453 R1454	1-216-085-00 1-216-013-00 1-216-065-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	2.2M 68K 33K 33 4.7K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1518 R1519 R1520 R1521 R1522	1-215-867-00 1-216-355-11 1-216-027-00 1-216-029-00 1-249-400-11 1-216-350-11	METAL OXIDE METAL OXIDE METAL GLAZE METAL GLAZE CARBON	3.3 120 150 39 1.2	5% 5% 5%	1W 1/10W 1/10W 1/4W	F F
R1456 R1457 R1458 R1459	1-216-089-00 1-216-085-00 1-216-133-00	METAL GLAZE METAL GLAZE METAL GLAZE	47K 33K	5% 5%	1/10W 1/10W		R1524 R1525	1-216-427-00 1-216-083-00	METAL OXIDE METAL GLAZE	120 27K	5% 5% 5%	1W 1/10W 1/10W 1/4W	F F
R1463 R1464	1-216-645-11 1-216-645-11 1-216-057-00	METAL GLAZE METAL CHIP METAL CHIP METAL CHIP METAL CHIP METAL GLAZE	100K 560 560 560 2.2K	5% 0.50% 0.50% 0.50% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1528 R1529 R1530 R1531 R1532	1-215-869-11 1-202-829-11 1-216-115-00 1-247-697-11 1-216-059-00	CARBON METAL OXIDE  SOLID METAL GLAZE CARBON METAL GLAZE CARBON METAL CHIP	1K 8.2K 560K 56 2.7K	20%	1/2W 1/10W 1/4W 1/10W	
R1466 R1467 R1468	1-216-055-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	100K 1.8K 10K 56K 2.2K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1533 R1534 ER1535 A ER1536 A	1-249-414-11 1-216-659-11 1-249-389-11	METAL CHIP CARBON METAL GLAZE	2.2K	0.50%	1/4W	
R1471 R1472 R1473	1-216-085-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	2.2K 1K 33K 22K 33K	5%	1/10W		1 11538	1-216-073-00 1-216-689-11 1-216-105-91 1-216-081-00 1-216-111-00 1-216-027-00	METAL GLAZE	39K 220K 22K	5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R1476 R1477 R1478	1-216-057-00	METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	12K 3.9K 2.2K 3.3K 47K	0.50% 5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1543 R1544 R1545 R1547 R1548	1-216-027-00 1-216-117-00 1-216-101-00 1-216-393-00 1-216-057-00 1-260-094-11 1-216-105-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL OXIDE METAL GLAZE	390K 120 680K 150K 2.2 2.2K 390		1/10W 1/10W 1/10W 3W 1/10W	F
R1482 R1483 R1484	1-216-089-00		560K 47K 47K 22K 470K	5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1549 R1550 R1551 R1552 R1553	1-260-094-11 1-216-105-91 1-249-393-11 1-216-091-00 1-216-091-00	CARBON  METAL GLAZE CARBON METAL GLAZE METAL GLAZE			1/2W 1/10W 1/4W 1/10W 1/10W	F
R1486 R1487 R1488 R1489 R1490	1-216-121-00 1-216-113-00 1-216-083-00 1-216-069-00 1-216-035-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	1M 470K 27K 6.8K 270	5% 5% 5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1554 R1555 R1556 R1557 R1558	1-216-059-00 1-216-295-91 1-216-071-00 1-218-760-11 1-249-393-11	METAL GLAZE  CONDCTOR, CHI METAL GLAZE METAL CHIP CARBON	2.7K	5% 5% 0.50% 5%	1/10W 1/10W 1/10W 1/4W	F
R1491 R1492 R1493 R1494 R1495	1-216-035-00 1-216-035-00 1-216-083-00 1-216-081-00 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	270 270 27K 22K 47K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		R1559	1-249-393-11 1-216-049-91 1-208-812-11 1-214-964-00 1-214-964-00	CARBON  METAL GLAZE  METAL CHIP  METAL  METAL	10 1K 18K 1M 1M	5% 5%	1/4W 1/10W 1/10W 1/4W 1/4W	F
R1498 R1499 R1500 R1501 R1502	1-216-057-00 1-216-057-00 1-216-647-11 1-216-071-00 1-260-105-11	METAL GLAZE METAL GLAZE METAL CHIP METAL GLAZE CARBON	2.2K 2.2K 680 8.2K 3.3K	5% 5% 0.50% 5%	1/10W 1/10W 1/10W 1/10W 1/2W		R1564 R1567 R1568 R1569 R1570	1-208-812-11 1-216-089-00 1-216-081-00 1-216-073-00 1-216-073-00	METAL CHIP  METAL GLAZE  METAL GLAZE  METAL GLAZE  METAL GLAZE  METAL GLAZE	18K 47K 22K 10K 10K	0.50% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R1503 R1504 R1505 R1506	1-216-063-00 1-208-817-11 1-247-688-11 1-216-037-00	METAL GLAZE METAL CHIP CARBON METAL GLAZE	3.9K 30K 10 330	5% 0.50% 5% 5%	1/10W 1/10W 1/4W 1/10W	F	R1571	1-216-103-91 1-216-101-00 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE	180K 150K 10K	5% 5% 5%	1/10W 1/10W 1/10W	



REF.NO. PART NO.	DESCRIPTION			REMARK	REF. NO.	PART NO.	DESCRIPTION				REMARK
R1574 1-216-041-00 R1575 1-216-025-91		470 100	5% 1/1 5% 1/1	(1.)	Ì	1-216-081-00		22K		1/10W	
R1576 1-216-025-91 R1577 1-216-025-91 R1578 1-216-065-00	METAL GLAZE METAL GLAZE METAL GLAZE	100 100 4.7K	5% 1/10 5% 1/10	M M	R2363 R2364 R2365	1-216-065-00 1-216-025-91 1-216-687-11 1-216-067-00	METAL GLAZE METAL GLAZE METAL CHIP METAL GLAZE	4.7K 100 33K 5.6K	5% 0.50%	1/10W 1/10W 1/10W 1/10W	
R1579 1-216-690-11 R2300 1-216-065-00 R2301 1-216-065-00	METAL CHIP METAL GLAZE METAL GLAZE	43K 4.7K 4.7K	0.50% 1/1 5% 1/1 5% 1/1	₩ W	R2367	1-216-099-00	METAL GLAZE	120K 4.7K	5% 5%	1/10W 1/10W	
R2302 1-216-671-11 R2303 1-216-093-00	METAL CHIP METAL GLAZE	6.8K 68K	0.50% 1/1 5% 1/1	W W	R2369 R2371 R2372	1-216-067-00 1-216-099-00 1-216-099-00 1-216-095-00 1-216-049-91 1-216-113-00 1-216-097-00 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE	82K 1K 470K	5% 5% 5% 5%	1/10W 1/10W 1/10W	
R2304 1-216-105-91 R2305 1-216-085-00 R2306 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	220K 33K 47K 220	5% 1/1 5% 1/1 5% 1/1 5% 1/1 5% 1/1	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	R2374	1-216-097-00 1-216-089-00 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE	100K 47K 47K	5% 5% 5%	1/10W 1/10W 1/10W	
R2307 1-216-033-00 R2308 1-216-103-91 R2309 1-216-049-91	METAL GLAZE METAL GLAZE	180K	5% 1/10 5% 1/10	W W	R2377 R2378 R2379	1-216-033-00 1-216-089-00 1-216-033-00		220 47K 220	5% 5% 5%	1/10W 1/10W 1/10W	
R2310 1-216-095-00 R2311 1-216-073-00 R2312 1-216-053-00	METAL GLAZE METAL GLAZE METAL GLAZE	82K 10K 1.5K	J/6 1/1	177	1 114 201	1 210 007 00	METAL GLAZE METAL GLAZE METAL GLAZE	47K 47K 47K	5% 5%	1/10W 1/10W 1/10W	
R2313 1-216-049-91 R2314 1-216-645-11 R2315 1-208-810-11	METAL GLAZE METAL CHIP METAL CHIP	1 K 560 15 K	0.50% 1/1	i₩ Maria	R2383 R2384	1-216-089-00 1-216-033-00 1-216-689-11	METAL GLAZE METAL GLAZE	220 39K	5% 5%	1/10W 1/10W	
R2316 1-216-081-00 R2317 1-216-049-91 R2318 1-216-069-00	METAL GLAZE METAL GLAZE METAL GLAZE	22K 1K 6.8K	5% 1/1 5% 1/1 5% 1/1	W W	R2385 R2386 R2387	1-216-073-00 1-216-073-00 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE	10K 10K 10K	5% 5%	1/10W 1/10W 1/10W	
R2319 1-216-093-00 R2320 1-216-677-11	METAL GLAZE METAL CHIP	68K 12K	5% 1/1 0.50% 1/1	₩ W	R2389 R2390	1-216-033-00 1-216-647-11	METAL CHIP	220 680		1/10W 1/10W 1/10W	
R2321 1-216-057-00 R2322 1-216-065-00 R2323 1-208-814-11	METAL GLAZE METAL GLAZE METAL CHIP	2.2K 4.7K 22K	5% 1/1 0.50% 1/1	iM M	R2391 R2392 R2393 R2394	1-216-089-00 1-216-033-00 1-216-689-11 1-216-073-00 1-216-073-00 1-216-033-00 1-216-647-11 1-216-073-00 1-216-073-00 1-216-073-00 1-216-081-00 1-216-041-00 1-216-109-00	METAL CHIP METAL GLAZE METAL GLAZE METAL GLAZE	680 10K 10K 22K	5% 5% 5%	1/10W 1/10W 1/10W 1/10W	
R2324 1-216-073-00 R2325 1-216-063-00 R2326 1-216-041-00	METAL GLAZE METAL GLAZE METAL GLAZE	10K 3.9K 470	5% 1/1 5% 1/1 5% 1/1		R2396 R2397	1-216-041-00 1-216-113-00	METAL GLAZE METAL GLAZE	470 470K		1/10W 1/10W	
R2327 1-216-059-00 R2328 1-216-049-91	METAL GLAZE	1K	5% 1/1	W	R2399 R2501	1-216-073-00 1-216-083-00	METAL GLAZE	330K 10K 27K 15K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W	
R2329 1-216-059-00 R2330 1-216-049-91 R2331 1-216-059-00 R2332 1-216-049-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	2.7K 1K 2.7K 1K	5% 1/1 5% 1/1 5% 1/1		R2551 R2552	1-216-091-00 1-216-085-00	METAL GLAZE METAL GLAZE	56K 33K		1/10W 1/10W	
R2333 1-216-089-00 R2334 1-216-041-00	METAL GLAZE METAL GLAZE	47K 470 3.3K		)₩	R2553	1-216-083-00 1-216-055-00 1-216-051-00		27K 1.8K 1.2K	5% 5% 5% 5%	1/10W 1/10W 1/10W	
R2335 1-216-061-00 R2336 1-216-065-00 R2337 1-216-037-00 R2338 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	3.3K 4.7K 330 10K	5% 1/1 5% 1/1 5% 1/1 5% 1/1	)W )W	R2557 R2558 R2559	1-216-067-00 1-216-057-00 1-216-039-00	METAL GLAZE METAL GLAZE METAL GLAZE	5.6K 2.2K 390	5%	1/10W 1/10W 1/10W	
R2339 1-216-037-00 R2341 1-216-037-00	METAL GLAZE METAL GLAZE	330 330	5% 1/1 5% 1/1 5% 1/1	)W	R2560 R2561	1-216-069-00 1-216-001-00	METAL GLAZE METAL GLAZE	6.8K 10	5% 5% 5%	1/10W 1/10W	
R2342 1-216-071-00 R2343 1-216-081-00 R2344 1-216-121-00	METAL GLAZE METAL GLAZE METAL GLAZE	8.2K 22K 1M	5% 1/1 5% 1/1 5% 1/1	)W	R2562 R2563 R3001	1-216-001-00 1-216-057-00 1-249-393-11	METAL GLAZE METAL GLAZE CARBON	10 2.2K 10 10K	5% 5% 5% 5%	1/10W 1/10W 1/4W 1/10W	F
R2345 1-208-812-11 R2346 1-216-061-00 R2347 1-216-061-00	METAL CHIP METAL GLAZE METAL GLAZE	18K 3.3K	0.50% 1/1 5% 1/1 5% 1/1	)W	R3301 R3302 R3303	1-216-073-00 1-216-065-00 1-216-065-00	METAL GLAZE METAL GLAZE METAL GLAZE	4.7K		1/10W 1/10W	
R2348 1-216-061-00 R2349 1-208-810-11	METAL GLAZE METAL CHIP	3.3K 3.3K 15K	5% 1/1 0.50% 1/1	)W )W	R3304 R3305 R3306	1-216-065-00 1-216-061-00 1-216-063-00	METAL GLAZE METAL GLAZE METAL GLAZE	4.7K 3.3K 3.9K	5% 5% 5% 5%	1/10W 1/10W 1/10W	
R2350 1-216-061-00 R2351 1-216-061-00 R2352 1-216-061-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	3.3K 3.3K 3.3K 470	5% 1/1 5% 1/1 5% 1/1 5% 1/1	)W )W	R3307 R3308 R3309	1-216-091-00 1-216-097-00 1-216-073-00	METAL GLAZE METAL GLAZE METAL GLAZE	56K 100K 10K	5% 5% 5%	1/10W 1/10W 1/10W	
R2353 1-216-041-00 R2354 1-216-025-91 R2356 1-216-089-00	METAL GLAZE METAL GLAZE	100 47K	5% 1/1	)W	R3310 R3311 R3312	1-216-049-91 1-216-091-00 1-216-105-91	METAL GLAZE METAL GLAZE METAL GLAZE	1K 56K 220K	5% 5% 5%	1/10W 1/10W 1/10W	
R2357 1-216-091-00 R2358 1-216-025-91 R2361 1-216-099-00	METAL GLAZE METAL GLAZE METAL GLAZE	56K 100 120K	5% 1/1 5% 1/1 5% 1/1 5% 1/1	)₩	R3320 R3333	1-216-085-00 1-216-113-00	METAL GLAZE METAL GLAZE	33K 470K	5% 5%	1/10W 1/10W	





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Replace only with part number

specified.

Les composants identifies par une trame et une marque  $ilde{m{m{m{m{m{\Delta}}}}}$ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION				REMARK	REF.NO.	PART NO.	DESCRIPTION			REMARK
R3335 R3337 R3338	1-216-073-00 1-216-113-00 1-216-099-00 1-216-103-91 1-216-690-11	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP	10K 470K 120K 180K 43K	5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		RV501	1-223-102-00	IABLE RESISTOR RES, ADJ, WIR			
R3347	1-216-095-00 1-216-089-00 1-216-025-91 1-216-025-91 1-216-025-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	82K 47K 100 100	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		T500 T501 ▲	1-426-668-11 . 1-453-163-11	TRANSFORMER, TRANSFORMER A	FERRITE (HD SSY, FLYBAC	T) K	
R3355 R3356	1-216-025-91 1-216-113-00 1-216-089-00 1-216-051-00 1-216-051-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	100 470K 47K 1.2K 1.2K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		TH500	1-807-970-11	RMISTOR> THERMISTOR STAL>			
R3358 R3359 R3360 R3361	1-216-051-00 1-216-081-00 1-216-073-00 1-216-089-00 1-216-049-91	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	1.2K 22K 10K 47K 1K	5%	1/10W 1/10W 1/10W 1/10W 1/10W		X101 X300 X301	1-577-259-11 1-527-722-00	VIBRATOR, CER VIBRATOR, CRY OSCILLATOR, C	STAL RYSTAL	*****	*****
	1-216-049-91		1 K		1/10W		i		M BOARD, COMP			
R3364 R3376 R3378	1-216-073-00 1-216-081-00 1-216-115-00 1-216-041-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	10K 22K 560K 470	5% 5% 5%	1/10W 1/10W 1/10W 1/10W		i f t t t	1-540-044-11	**************************************	****		
R3382	1-216-645-11	METAL CHIP	560	0.50%			r 1 1	<cap< td=""><td>ACITOR&gt;</td><td></td><td></td><td></td></cap<>	ACITOR>			
R3384 R3385	1-216-069-00 1-216-063-00 1-216-057-00 1-216-057-00	METAL GLAZE METAL GLAZE	6.8K 3.9K 2.2K 2.2K	5% 5%	1/10W 1/10W 1/10W 1/10W		C1201 C1202 C1203	1-164-161-11 1-163-103-00	CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP	0.0022MF 27PF	20% 10% 10% 5%	10V 50V 50V 50V
R3394 R3395 R3396	1-216-057-00 1-216-089-00 1-216-049-91 1-216-041-00 1-216-041-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	2.2K 47K 1K 470 470	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W		1	1-163-103-00 1-164-346-11 1-164-346-11 1-126-101-11	CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP ELECT	1MF 1MF 100MF		50V 16V 16V 16V
R3398 R3399 R3400	1-216-101-00 1-216-025-91 1-216-091-00	METAL GLAZE	150K 100 56K 3.3K		1/10W 1/10W 1/10W 1/10W		C1211 C1212 C1213 C1214	1-164-346-11 1-163-109-00 1-126-301-11 1-126-301-11	CERAMIC CHIP ELECT ELECT	1MF 1MF 1MF	5% 20% 20%	16V 50V 50V 50V
R3402	1-216-092-00	METAL GLAZE	62K		1/10W		C1215	1-126-301-11 1-126-301-11	ELECT	IMF IMF	20% 20%	50V 50V
R3404	1-216-025-91 1-216-073-00 1-216-067-00	METAL GLAZE METAL GLAZE METAL GLAZE	100 10K 5.6K	5% 5%	1/10W 1/10W 1/10W			<con< td=""><td>NECTOR&gt;</td><td></td><td></td><td></td></con<>	NECTOR>			
R3406 R3407	1-216-073-00 1-216-057-00	METAL GLAZE METAL GLAZE	10K 2.2K	5% 5%	1/10W 1/10W 1/10W		CN1201; CN1202;	*1-565-488-11	CONNECTOR, BO PLUG, CONNECT	ARD TO BOAR OR 3P	D 12P	
R3409 R3410 R4401	1-216-073-00 1-216-025-91 1-216-073-00 1-216-085-00	METAL GLAZE METAL GLAZE METAL GLAZE	10K 100 10K 33K	5% 5% 5% 5%	1/10W 1/10W 1/10W		D1200	<dio 8-719-801-78</dio 				
	1-216-113-00 1-216-073-00	METAL GLAZE	470K 10K		1/10W 1/10W		D1200	0-119-001-10	DIODE 155164			
R4405 R4407 R4408	1-216-067-00 1-216-061-00 1-216-059-00 1-216-059-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	5.6K 3.3K 2.7K 2.7K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W		IC1201		IC NJM78L05A IC UPD78P014Y	CW		
R4411 R4412	1-216-059-00 1-216-113-00 1-216-113-00 1-216-295-91	METAL GLAZE METAL GLAZE METAL GLAZE CONDCTOR, CHI	2.7K 470K 470K P	5% 5% 5%	1/10W 1/10W 1/10W		IC1203 IC1204	8-759-335-70	IC ST24C02CB1 IC UPD71051GB IC ADM232LAR- IC S-80743AL-	REEL		
R4414	1-216-295-91	CONDCTOR, CHI	P									
	1-216-295-91 1-216-295-91	CONDCTOR, CHI					Q1200		NSISTOR> TRANSISTOR 2S	C1623-L5L6		
						4.			_			

The components identified by shading and mark A are critical for safety.
Replace only with part number

specified.

Les composants identifies par une trame et une marque A sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.



REF.NO.	PART NO.	DESCRIPTION			REMARK	REF.NO.	PART NO.	DESCRIPTION			REMARK
	<res:< td=""><td>(STOR&gt;</td><td></td><td></td><td></td><td>C628 C629 C630</td><td>1-102-038-00 1-124-922-11 1-124-907-11</td><td>CERAMIC ELECT ELECT</td><td>0.001MF 1000MF 10MF</td><td>20% 20%</td><td>500V 50V 50V</td></res:<>	(STOR>				C628 C629 C630	1-102-038-00 1-124-922-11 1-124-907-11	CERAMIC ELECT ELECT	0.001MF 1000MF 10MF	20% 20%	500V 50V 50V
R1200 R1201 R1202 R1203 R1204	1-260-313-51 1-216-073-00 1-216-295-91 1-216-065-00 1-216-065-00	CARBON METAL GLAZE CONDCTOR, CHI METAL GLAZE METAL GLAZE	56 5% 10K 5% P 4.7K 5% 4.7K 5%	1/2W 1/10W 1/10W 1/10W		C631 C632 C633 C634	1-136-853-11 1-124-562-11 1-124-122-11 1-124-911-11 1-124-910-11	FILM ELECT ELECT ELECT	0.56MF 47MF 100MF 220MF 47MF	5% 20% 20% 20% 20%	200V 160V 50V 50V 50V
R1205 R1206 R1207 R1210 R1211	1-216-065-00 1-216-295-91 1-216-295-91 1-216-025-91 1-216-025-91 1-216-025-91	METAL GLAZE CONDCTOR, CHI CONDCTOR, CHI METAL GLAZE METAL GLAZE METAL GLAZE	P 100 5% 100 5%	1/10W 1/10W 1/10W		CN601 CN602	1-137-484-11 <con 1-691-960-11 *1-695-561-11</con 	FILM  NECTOR>  PIN, CONNECT  PIN CONNECT	O.47MF OR (PC BOARI	10% 0) 3P	630V
R1214 R1215 R1216 R1217	1-216-025-91 1-216-025-91 1-216-089-00 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	100 5% 100 5% 100 5% 47K 5% 47K 5% 47K 5%	1/10W 1/10W 1/10W 1/10W 1/10W		CN604 CN605	*1-508-765-00 *1-564-506-11 *1-573-964-11 *1-564-508-11	PIN, CONNECT PLUG, CONNECT PIN, CONNECT PLUG, CONNEC	CTOR 3P FOR (PC BOARI		
K122U	1-216-025-91	METAL GLAZE	100 3/6	1/ 10#		l jeses	<b><dic< b=""></dic<></b>				
S1200	<swi 1-570-623-11</swi 					D602 4	\$ 8-719-032-39 \$ 8-719-032-39 \$ 8-719-032-39 \$ 8-719-032-39 \$ 8-719-971-65	DIODE DSA3A4 DIODE DSA3A4 DIODE DSA3A4 DIODE DSA3A4 DIODE RGP154	1-F3 1-F3 1-F3		
		STAL>				D606	8-719-300-33	DIODE RU-3A	4		
	1-577-619-11					D607	8-719-300-33 8-719-911-19	DIODE RU-3AI DIODE 1SS119 DIODE RU-3AI	9-25		
****	*******				******	D609 D610	8-719-300-33 8-719-300-33	DIODE RU-3A			
	*A-1316-215-A *A-1316-216-A	*********	:**** PLETE (PVM			D612 D613 D614 D615 D616	8-719-045-48 8-719-971-65 8-719-045-48 8-719-971-65 8-719-300-33	DIODE FML-G DIODE RGP15 DIODE FML-G DIODE RGP15 DIODE RU-3A	J-6040 12S J-6040		
	<cap< td=""><td>ACITOR&gt;</td><td></td><td></td><td></td><td>D617</td><td>8-719-110-46</td><td>DIODE RD16E</td><td>SB3</td><td></td><td></td></cap<>	ACITOR>				D617	8-719-110-46	DIODE RD16E	SB3		
C603 C604 C605	Δ. 1-136-360-51 Δ. 1-136-360-51 Δ. 1-161-741-21 Δ. 1-161-741-21 Δ. 1-161-741-21	FILM FILM CERAMIC CERAMIC CERAMIC	0.22MF 0.22MF 0.001MF 0.001MF 0.001MF	20% 20% 10% 10% 10%	250V 250V 400V 400V 400V		<fus 1-532-742-11 1-533-189-11 1-532-742-11</fus 	FUSE, GLASS HOLDER, FUS FUSE, GLASS	E TUBE 1.6A/		
C608 C609 C610	Δ. 1-161-953-71 Δ. 1-161-953-71 Δ. 1-161-953-71	CERAMIC CERAMIC CERAMIC CERAMIC	0.001MF 0.0047MF 0.0047MF 0.0047MF	10% 20% 20% 20%	400V 400V 400V 400V		1-533-189-11 <fe< td=""><td>RRITE BEAD&gt;</td><td><b>C</b></td><td></td><td></td></fe<>	RRITE BEAD>	<b>C</b>		
	▲ 1-161-953-71  ▲ 1-137-484-61 1-137-484-11 1-129-720-00 1-136-619-11 1-124-910-11	FILM FILM FILM FILM ELECT	0.0047MF 0.47MF 0.47MF 0.033MF 0.0016MF 47MF	20% 10% 10% 3% 20%	400Y 630V 630V 630V 2KV 35V	FB601 FB602 FB603 FB604 FB605	1-410-396-41 1-410-396-41 1-410-396-41 1-410-396-41 1-410-396-41	FERRITE BEA FERRITE BEA FERRITE BEA	D INDUCTOR OD INDUCTOR OD INDUCTOR O	. 45UH . 45UH . 45UH	
C617 C618 C619 C620 C621	1-136-557-11 1-126-096-11 1-124-911-11 1-161-754-00 1-125-494-11	FILM ELECT ELECT CERAMIC ELECT(BLOCK)	0.0033MF 10MF 220MF 0.001MF 560MF	10% 20% 20% 10% 20%	630V 25V 50V 2KV 160V	10602	4-382-854-11	IC STR-M652 SCREW (M3X1 IC STR-S311 SCREW (M3X1	0), P, SW (+ 5 0), P, SW (+		
C622 C623 C624 C625 C626	1-102-038-00 1-126-944-11 1-102-038-00 1-124-557-11 1-102-038-00	CERAMIC ELECT CERAMIC ELECT CERAMIC	0.001MF 3300MF 0.001MF 1000MF 0.001MF	20% 20%	500V 25V 500V 25V 500V		8-759-701-56 4-382-854-11 8-759-231-53 4-382-854-11	SCREW (M3X1 IC TA7805S	0), P, SW (+		
C627	1-124-922-11	ELECT	1000MF	20%	50V						





The components identified by 

Les composants identifies par une trame et une marque 🛕 sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO. PART NO. DESCRIPTION REMARK REF.NO. PART NO. DESCRIPTION	REMARK 
<jumper> THP601A1-808-059-32 THERMISTOR, POSITIVE</jumper>	
JW609 1-410-679-31 INDUCTOR 270UH (PVM-1353MD) <varistor></varistor>	
<coil> VDR601Δ1-809-942-71 VARISTOR</coil>	
1601 1-411-215-11 COIL. CHOKE 200UH ***********************************	
L1601 1-410-679-31 INDUCTOR 270UH (PVM-1453MD) L1602 1-421-421-00 COIL, CHOKE *A-1331-299-A C BOARD, COMPLETE	
<pre><photo coupler=""></photo></pre>	
*4-374-913-01 COVER (REAR LID), CV VOL PH601 8-749-923-50 PHOTO COUPLER PC111YS	
<capacitor></capacitor>	
CAPACITOR   CAPA	% 500V % 50V
<pre><resistor></resistor></pre>	
R601 A.1-202-885-91 SOLID 1M 20% 1/2W   C708 1-136-601-11 FILM 0.01MF 5% R602 1-216-489-11 METAL OXIDE 27K 5% 3W F   C710 1-101-880-00 CERAMIC 47PF 5% R603 1-216-491-11 METAL OXIDE 56K 5% 3W F   C711 1-101-880-00 CERAMIC 47PF 5%	630V 50V 50V
DAGE 1.240-415-11 CADDON 690 67 1/46 1/1/ 1-331-331-10 LERAMII 4/PF 24	50V 250V
R606 1-207-642-00 WIREWOUND 0.15 10% 3W F C714 1-102-976-00 CERAMIC 180PF 5% R607 1-249-423-11 CARBON 3.3K 5% 1/4W C715 1-102-976-00 CERAMIC 180PF 5% R608 1-249-426-11 CARBON 5.6K 5% 1/4W C716 1-102-976-00 CERAMIC 180PF 5% 5% 1/4W C716 1-102-976-00 CERAMIC 180PF 5% 1/4W C716 180PF 5% 1/4W C7	50V 50V 50V
R610 1-249-421-11 CARBON 2.2K 5% 1/4W   C717 1-107-372-11 MYLAR 0.22MF 10   C718 1-107-372-11 MYLAR 0.22MF 10	% 200V
R611 1-249-417-11 CARBON 1K 5% 1/4W   C720 1-108-700-11 MYLAR 0.047MF 10 R612 1-249-404-00 CARBON 82 5% 1/4W   C734 1-102-973-00 CERAMIC 100PF 5% R613 1-249-419-11 CARBON 1.5K 5% 1/4W   C735 1-102-816-00 CERAMIC 120PF 5%	% 200V 50V 50V
R614 1-249-385-11 CARBON 2.2 5% 1/4W F R615 1-218-265-11 METAL 8.2M 5% 1W C736 1-102-816-00 CERAMIC 120PF 5%	50V
R616 1-216-341-11 METAL OXIDE 0.22 5% 1W F R617 1-216-341-11 METAL OXIDE 0.22 5% 1W F <connector></connector>	
R618 1-249-443-11 CARBON 0.47 5% 1/4W F R619 1-216-341-11 METAL OXIDE 0.22 5% 1W F R620 1-249-443-11 CARBON 0.47 5% 1/4W F CN701 *1-564-511-11 PLUG, CONNECTOR 8P CN702 *1-573-964-11 PIN, CONNECTOR (PC BOARD) 6 CN703 *1-691-134-11 PIN, CONNECTOR (PC BOARD) 2	P P
R621 1-215-877-11 METAL OXIDE 22K 5% 1W F R622 1-247-700-11 CARBON 100 5% 1/4W R623 1-249-417-11 CARBON 1K 5% 1/4W <diode></diode>	
R624 1-216-341-11 METAL OXIDE 0.22 5% 1W F R625 1-216-341-11 METAL OXIDE 0.22 5% 1W F D701 8-719-911-19 DIODE ISS119-25	
R626 1-247-895-00 CARBON 470K 5% 1/4W D703 8-719-911-19 DIODE 1SS119-25 R631 1-247-807-31 CARBON 100 5% 1/4W D704 8-719-911-19 DIODE 1SS119-25 R1602 1-215-869-11 METAL OXIDE 1K 5% 1W F D705 8-719-911-19 DIODE 1SS119-25	
R1603 1-202-846-00 SOLID 470K 20% 1/2W D706 8-719-911-19 DIODE 1SS119-25	
D707 8-719-901-83 DIODE 1SS83   D708 8-719-901-83 DIODE 1SS83   D708 8-719-901-83 DIODE 1SS83   D709 8-719-901-83 DIODE 1SS83   D709 8-719-901-83 DIODE 1SS83   D713 8-719-901-83 DIODE 1SS8	
D715 8-719-901-83 D10DE 1SS83	
<pre></pre>	
T601 A 1-426-716-11 TRANSFORMER, LINE FILTER (LFT) T602 A 1-426-716-11 TRANSFORMER, LINE FILTER (LFT) T603 1-427-885-11 TRANSFORMER, CONVERTER (SRT) <jack></jack>	
J701 & 1-526-819-11 SOCKET, PICTURE TUBE	

<THERMISTOR>

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REF.NO.	PART NO.	DESCRIPTION				REMARK	REF.NO.	PART NO.	DESCRIPTION				REMARK
L701 L705	<coi 1-410-667-31 1-412-532-11</coi 						R749 R750 R751	1-215-902-11 1-249-400-11 1-247-887-00	CARBON CARBON	47K 39 220K		2W 1/4W 1/4W	F
		NSISTOR>					R753	1-247-887-00 1-247-887-00	CARBON	220K	5%	1/4W	
Q701 Q702 Q703 Q704 Q705	8-729-119-78 8-729-119-78 8-729-119-78 8-729-200-17 8-729-200-17	TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S	C2785- C2785- A1091-	HFE HFE O O			RV7084	1-230-641-11 . 1-230-619-11 1-230-641-11	RES, ADJ, MET RES, ADJ, MET	AL GLAZE AL GLAZE AL GLAZE	E 110M	H	
Q706 Q707 Q708 Q709 Q710	8-729-200-17 8-729-326-11 8-729-326-11 8-729-326-11 8-729-200-17	TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S	C2611 C2611 C2611	0			*****	************** *A-1372-094-A *4-348-208-00 <con *1-564-527-11 *1-564-526-11</con 	H BOARD, COMF	********* PLETE *****	*****	*****	******
Q711 Q712 Q713 Q714 Q715	8-729-200-17 8-729-200-17 8-729-255-12 8-729-255-12 8-729-119-78	TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S	A1091- C2551- C2551-	0 0 0 0 HFE			CN105	<con< td=""><td>NECTOR&gt;</td><td>OR 12P</td><td></td><td></td><td></td></con<>	NECTOR>	OR 12P			
Q716 Q717	8-729-119-78 8-729-119-78	TRANSISTOR 25	C2785- C2785-	HFE			CN106	*1-564-526-11 <dio< td=""><td></td><td>OK IIP</td><td></td><td></td><td></td></dio<>		OK IIP			
	<res< td=""><td>ISTOR&gt;</td><td></td><td></td><td></td><td></td><td></td><td>8-719-920-05</td><td>DIODE SLP2310</td><td>C-50</td><td></td><td></td><td></td></res<>	ISTOR>						8-719-920-05	DIODE SLP2310	C-50			
R702 R704 R705	1-247-903-00 1-215-405-00 1-215-405-00	CARBON METAL METAL METAL	1M 220 220 220	1%	1/4W 1/4W 1/4W 1/4W		D2103 D2104	8-719-812-32 8-719-901-33	DIODE TLY123 DIODE 1SS133				
R706 R707	1-215-405-00 1-249-431-11	CARBON	15K	1% 5%	1/4W		R2101	1-249-419-11	CARBON	1.5K 5	5%	1/4W 1/4W	
R708 R709 R710 R711 R712	1-249-431-11 1-249-431-11 1-215-391-00 1-215-394-00 1-215-392-00	CARBON CARBON METAL METAL METAL	15K 15K 56 75 62	5% 5% 1% 1%	1/4W 1/4W 1/4W 1/4W 1/4W		R2137 R2138 R2139	1-249-414-11	CARBON CARBON CARBON	560 560 560	5% 5% 5%	1/4W 1/4W 1/4W	
R715 R716 R717 R718 R719	1-202-818-00 1-216-486-00 1-202-818-00 1-216-486-00 1-202-818-00	SOLID METAL OXIDE SOLID METAL OXIDE SOLID	1K 8.2K 1K 8.2K 1K	20%	1/2W 3W 1/2W 3W 1/2W		R2141 R2142 R2143	1-249-414-11 1-249-414-11 1-249-414-11 1-249-414-11 1-249-414-11	CARBON CARBON CARBON	560 560 560 560 560	5% 5% 5% 5%	1/4W 1/4W 1/4W 1/4W 1/4W	
R720	1-216-486-00 1-202-883-11 1-202-838-00 1-202-842-11 1-202-719-00	METAL OXIDE	8.2K	5%	3W	F	R2148	1-249-414-11 1-215-419-00 1-215-414-00 1-215-409-00 1-215-407-00	METAL	510 1 330 1	5% 1% 1% 1% 1%	1/4W 1/4W 1/4W 1/4W 1/4W	
R731 R732 R733 R734 R735	1-249-409-11 1-249-409-11 1-249-409-11 1-249-409-11 1-249-409-11	CARBON CARBON CARBON CARBON CARBON	220 220 220 220 220 220	5% 5% 5% 5%	1/4W 1/4W 1/4W	F	R2152 R2153 R2154 R2155 R2156	1-215-404-00 1-215-401-11 1-215-399-00 1-215-397-00 1-215-421-00	METAL METAL METAL METAL METAL	200 150 120 100 1K	1% 1% 1% 1% 1%	1/4W 1/4W 1/4W 1/4W 1/4W	
R736 R737 R738 R739 R740	1-249-409-11 1-247-807-31 1-247-807-31 1-247-807-31 1-249-429-11	CARBON CARBON CARBON CARBON CARBON	220 100 100 100 100	5% 5% 5% 5% 5%	1/4W 1/4W 1/4W 1/4W 1/4W	F	R2157 R2158 R2159 R2160	1-215-416-00 1-215-410-00 1-215-405-00 1-215-421-00	METAL METAL METAL METAL	620 360 220 1K	1% 1% 1% 1%	1/4W 1/4W 1/4W 1/4W	
R741	1-249-429-11	CARBON	10K			F	DV2101	<var 1-223-504-21<="" td=""><td>IABLE RESISTOR</td><td></td><td></td><td></td><td></td></var>	IABLE RESISTOR				
R742 R744 R745 R746	1-249-429-11 1-249-429-11 1-249-429-11 1-215-879-11	CARBON CARBON CARBON METAL OXIDE	10K 10K 10K 47K	5% 5% 5% 5%	1/4W 1/4W	F	RV2103 RV2105 RV2109	1-223-735-11 1-223-735-11 1-223-735-11 1-223-735-11	RES, VAR, CAR RES, VAR, CAR RES, VAR, CAR RES, VAR, CAR	RBON 20K RBON 20K RBON 20K			
R747 R748	1-247-725-11 1-249-923-11	CARBON CARBON	10K 1K	5% 5%	1/4W 1/4W	F F	1	1-223-504-21					









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REF.NO. PART NO.	DESCRIPTION	REMARK
<swi< td=""><td>TCH&gt;</td><td></td></swi<>	TCH>	
\$2101 1-570-101-41 \$2102 1-570-101-41 \$2103 1-570-101-41 \$2104 1-570-101-41 \$2105 1-570-101-41	SWITCH, KEY BOARD SWITCH, KEY BOARD SWITCH, KEY BOARD SWITCH, KEY BOARD SWITCH, KEY BOARD	
\$2106 1-570-969-11 \$2107 1-570-969-11 \$2108 1-570-101-41 \$2109 1-570-969-11 \$2110 1-570-101-41	SWITCH, KEY BOARD SWITCH, KEY BOARD SWITCH, KEY BOARD SWITCH, KEY BOARD SWITCH, KEY BOARD	
S2111 1-570-101-41 S2113 1-570-969-11 S2114 1-570-969-11	SWITCH, KEY BOARD SWITCH, KEY BOARD SWITCH, KEY BOARD	
************	********	*******
*A-1388-166-A	J BOARD, COMPLETE	
<con< td=""><td>NECTOR&gt;</td><td></td></con<>	NECTOR>	
CN608 *1-695-561-11	PIN, CONNECTOR (PC BOAR	D) 7P
<swi< td=""><td>TCH&gt;</td><td></td></swi<>	TCH>	
	SWITCH, PUSH (A.C. POWE	R)
************	********	*********
*A-1390-391-B	S BOARD, COMPLETE (PVM-	1353MD)
<cap< td=""><td>ACITOR&gt;</td><td></td></cap<>	ACITOR>	
C805 1-102-978-00 C806 1-136-165-00 C807 1-130-477-00 C810 1-136-165-00 C811 1-136-165-00	CERAMIC 220PF FILM 0.1MF MYLAR 0.0033MF FILM 0.1MF FILM 0.1MF	5% 50V 5% 50V 5% 50V 5% 50V 5% 50V
C812 1-136-495-11 C813 1-124-907-11 C818 1-136-165-00	FILM 0.068MF ELECT 10MF FILM 0.1MF	5% 50V 20% 50V 5% 50V
<con< td=""><td>NECTOR&gt;</td><td></td></con<>	NECTOR>	
CN801 *1-565-489-11	CONNECTOR, BOARD TO BOA	RD 13P

<1C> IC801 8-759-328-12 IC Z8622812PSC

<COIL>

<RESISTOR>

10UH

L801 1-410-470-11 INDUCTOR

R802 R803 R804 R805 1-249-435-11 CARBON 1-247-863-91 CARBON 1-215-454-00 METAL 1-215-461-00 METAL 1-249-417-11 CARBON

ί.	REF.NO.	PART NO.	DESCRIPTIO	ON 	REMARK
	R812 R813 R815 R816 R817	1-249-417-1 1-249-417-1 1-249-423-1 1-249-418-1 1-249-418-1	1 CARBON 1 CARBON 1 CARBON	1K 5% 1K 5% 3.3K 5% 1.2K 5% 1.2K 5%	1/4W 1/4W 1/4W 1/4W 1/4W
	R818 R819 R820	1-249-418-1 1-249-418-1 1-249-422-1	1 CARBON	1.2K 5% 1.2K 5% 2.7K 5%	1/4W 1/4W 1/4W
	*****	********	********	*********	************
		*A-1390-498-	A X BOARD, CO		
		<(	CONNECTOR>		
*	CN108	*1-564-518-1	1 PLUG, CONNI	ECTOR 3P	
		<[	OIODE>		
	D001 D002 D003 D004	8-719-301-3 8-719-301-3 8-719-301-3	B6 DIODE SEL4 B6 DIODE SEL4	410E-D 410E-D	
	*****	*******	********	*********	*******
529 v			MISCELLANE		
**		. 1-426-442-2 . 1-532-745- . 1-576-230-1 1-537-877- 1-544-063-	(1 FUSE,(H.B.)  1 TERMINAL BO	GNETIZATION TUBE 3.15A/12 C.) 3.15A/29 DARD ASSY, I/0	25V (PVM-1353MD) 50V (PVM-1453MD) J (Q BOARD)
	V901 ∆ ∆	1-690-871- 2.8-451-329- 3.8-734-525-( 3.8-734-822-( 3.8-734-523-(	12 DEFLECTION D5 PICTURE TUI D5 PICTURE TUI	YOKE Y14FZA BE 14FZ-4 (P BE 14FZ4 (P	
	Δ	8-734-622-0	)5 PICTURE TUI	BE 14FZ2 (P	VM-1453MD)
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REF.NO. PART NO.

DESCRIPTION

REMARK

# ACCESSORIES AND PACKING MATERIALS

▲ 1-551-631-22 ▲ 1-559-945-11 1-690-871-11 3-170-078-01 3-798-310-21	CORD, POWER (6.0A/250V) (PVM-1453MD) CORD, POWER (10A/1250V) (PVM-1353MD) CABLE (MINI DIN) 8P HOLDER (B), PLUG MANUAL, INSTRUCTION (PVM-1353MD)
3-798-310-41 3-798-710-11 *4-043-762-01 *4-043-763-01 4-048-070-01	MANUAL, INSTRUCTION (PVM-1453MD) MANUAL, PROTOCOL CUSHION (UPPER) (ASSY) CUSHION (LOWER) (ASSY) HINGE, COVER
4-048-071-01 4-048-073-01 4-048-145-01 4-048-145-11 4-048-176-01	COVER, CONTROL PANEL COVER, DROP PROTECTION MANUAL,INSTANT INFORMATION (PVM-1353MD) MANUAL,INSTANT INFORMATION (PVM-1453MD) SHEET, ADHESIVE
*4-048-226-01 *4-048-230-01 *4-381-155-01	INDIVIDUAL CARTON (PVM-1353MD) INDIVIDUAL CARTON (PVM-1453MD) BAG, PROTECTION